DOCUMENT RESUME

ED 139 908 08 CE 010 317

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TITLE	Three-Site Evaluation for Career Development Projects.
INSTITUTION	Policy Studies in Education, New York, N.Y.
SPONS AGENCY	Bureau of Occupational and Adult Education (DHEW/OE), Washington, D.C.; Ohio State Dept. of Education, Columbus. Div. of Vocational Education.
PUB DATE	Jun 76
NOTE	156p.
EDRS PRICE	MF-$0.83 HC-$8.69 Plus Postage.
DESCRIPTORS	Academic Achievement; Affective Objectives; *Career Education; Cognitive Objectives; Cost Effectiveness; Elementary Secondary Education; Fused Curriculum; Program Costs; *Program Effectiveness; Program Evaluation; *State Programs; *Student Evaluation; *Vocational Development
IDENTIFIERS	*Ohio

ABSTRACT

An evaluation was done of three sites (Cincinnati, Cleveland, and Springfield) participating in Ohio's Career Development Program for students in grades K-10 from 1975-1976 to (1) assess leadership characteristics of the individual programs and classroom teaching activities of the program teachers and (2) determine the amount and type of student learning of career education concepts in grades 3, 6, 8, and 10. To assess the program process, the local program directors, school administrators, teachers, and students were interviewed, instructional materials were examined, and classrooms were visited during 2-day site visits. Utilizing tests developed in Ohio, the pretest status and pre- and posttest growth of program and non-program students were analyzed to evaluate student learning. The 11 conclusions regarding student learning suggest that the program has influenced the learning of students, has made slightly more impact on cognitive than affective learning, and has been most successful in the elementary grades. The four conclusions about program process indicate that program directors and coordinators are capable of assuming a leadership role in infusing career development concepts into their schools, and appear to be providing for program expansion. (The appendix comprises two-thirds of this report and includes process evaluations and the pre- and posttest findings from the three study sites.) (EM)

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THREE-SITE EVALUATION FOR CAREER DEVELOPMENT PROJECTS

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A Department of Educational Research Council of America

JUNE, 1976

CE 010 317

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ACKNOWLEDGEMENTS

Policy Studies in Education would like to thank a number of people who have helped us in our many efforts to evaluate the Ohio Career Development Program. In past years, we received cooperation from many individuals and this year is no exception.

We extend our appreciation to Dr. Byrl Shoemaker, Director, Division of Vocational Education for his interest in our activities and support for our evaluation efforts.

Jack Ford, Assistant Director, Division of Vocational Education, Career Development Service, has been most cooperative and supportive. He arranged for our visits and test administrations and enabled this year's evaluation to run smoothly in every respect. His help, advice, and encouragement were given freely and were beneficial to our endeavors.

We also want to thank Carol Ritz, Supervisor, Career Development Service, who was available with information and suggestions, whenever we needed her.

A special recognition is deserved by all three Program Directors, Ms. Marlyn Bray in Cincinnati, Mr. Oliver Jones in Cleveland, and Mr. George Degenhart in Springfield. These Program Directors were very helpful in their assistance. They arranged for site visits and test administrations, which we know are complicated tasks. In all three districts, we received warm receptions and were able to make our necessary observations. We feel that our successful visits and test administrations were a direct result of these Program Directors' efforts.

In each school district, we also received the willing assistance of Program Coordinators who proved to be valuable information sources. We would like to give special thanks to each coordinator. They guided us in our visits and introduced us to principals, teachers, and students.

Finally, our thanks to all the classroom teachers and their students who took part in our activities. Their cooperation and participation were the heart of the year's work. They made it all possible. To them we are indeed grateful.

BACKGROUND

The Ohio Career Development Program

The present program emerged over a number of years, changing steadily from a set of separate projects at the beginning into the integrated program of today. The transition from separate projects into an integrated program is reviewed briefly below.

The Start of Career Education in Ohio

Career education began in Ohio in the late 1960's when the State Department of Education through the Division of Vocational Education funded local school districts to operate individual career education projects designed to serve selected grade ranges. One school district, for example, decided to start by operating a career education project for students in grades K-6, a project called the World of Work. A second district began with a project for junior high school students in grades 7-8, a project called Career Orientation. Some districts began high school projects.

Designating the Ohio Career Development Program for Grades K-10

In 1971, the Division decided to relate and extend all local projects so as to provide a continuous career education experience for students in grades K-10 in participating school districts. To accomplish that, the Division developed a set of State Curriculum Guides and asked all funded districts to use them.

The comprehensive Career Development Program which resulted was first implemented in 1972-73. It was comprised of the following segments, each of which became an integral part of the program: Career Motivation, originally called World of Work, for grades K-6; Career Orientation for grades 7-8; and Career Exploration for grades 9-10.

Number of School Districts Participating. In 1972-73, there were 20 districts participating in the Program; by 1973-74, 24 districts; by 1974-75, 30 districts; and in 1975-76, 32 districts.

Part D Project Sites. Among the 32 districts are three supported under the Division's VEA Part D grant from USOE. The three cities are:

1. The Cincinnati City School System which includes one high school and its ten feeder schools and involves 8,297*students.
2. The Cleveland City School System which includes one high school and its 17 feeder schools and involves 12,218*students.
3. The Springfield City School System which includes one high school and its 20 feeder schools and involves 9,432*students.

Evaluating the Ohio Career Development Program

The Program has been under intensive evaluation for four years. During that time, five major evaluations have been conducted by staff from Policy Studies in Education (PSE): 1) the 1972 observation/evaluation; 2) the 1973 development and administration of curriculum-based tests; 3) the 1973-74 evaluation/observation; 4) the 1974-75 development and administration of field-based tests; and 5) the 1975-76 three-site evaluation for career development projects.

This section summarizes the first four evaluations. The following sections describe the 1975-76 evaluation in greater detail.

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*Information on the program sites was supplied by the Division in September of 1975.

The 1972 Observation/Evaluation

In 1972-73, with twenty districts participating, staff from PSE were asked by the Division of Vocational Education to conduct site visits and interviews in all twenty districts in order to answer the following questions:

1. Is career education taking place in the classrooms?
2. Is an average allotment of $25.00 per student enough money to implement career education in the twenty participating districts?
3. Is an average allotment of $25.00 per student enough money to spread career education throughout the State of Ohio?
4. Should the career development program continue to be administered by the Division of Vocational Education?

Career Education Appeared To Be Successful. The report, *An Evaluation of the Ohio Career Development Program*, was submitted in February, 1973. Summarized answers to the four questions, which were elaborated in the report, are as follows:

Question 1: *Is career education taking place in the classroom*?

"In summary, career education in Ohio is beginning to take place in classrooms, especially in grades K-6, but in all grades it appears chiefly as additional activities rather than as fully integrated parts of existing curricula."

Question 2: *Is an average allotment of $25.00 per student enough money to implement career education in the twenty participating districts*?

"The average allocation of $25.00 per child is enough money to implement the Career Development Program in the twenty participating school districts--implement it to the degree indicated in the answer to Question 1 above."

Question 3: Is an average allotment of $25.00 per student enough money to spread career education throughout the State of Ohio?

"Generally, it can be said that since $25.00 per child is enough to implement a Career Development Program in twenty districts, the same allotment could suffice for other districts throughout the state which have characteristics in common with the present twenty."

Question 4: Should the Career Development Program continue to be administered by the Division of Vocational Education?

"Particularly during the early years of the Career Development Program and perhaps for years to come, career development can find no better administrative home within the Ohio Department of Education than it has found in the Division of Vocational Education."

The report also contained a series of recommendations for strenthening and improving the program. Some recommendations specifically related to the four questions; others reflected additional observations as a natural by-product of the visits and interviews.

The 1973 Development and Administration of Curriculum-Based Tests

In February, 1973, the Division asked PSE project staff to conduct an evaluation of the Career Development Program through testing students in four of the twenty school districts.

The four sites chosen by the Division for that evaluation were the four required to have an external evaluation as a condition of Federal funding: Ohio's one VEA Part C site and its three VEA Part D sites. The four sites constituted a reasonably representative cross-section of the kinds of schools to be found in most of the twenty school districts then taking part in the program. Thus the Division anticipated that by using the Part C and Part D sites as the locations for evaluating student learning, whatever it learned could be applied to improving the program in most of the other school districts.

An evaluation plan was proposed with two major objectives:

1. To develop and pilot test a sequential battery of cognitive and affective instruments for grades 3, 6, 8, and 10 based on the Career Development Program State Curriculum Guides issued for grades K-6, grades 7-8, and grades 9-10. The tests would be designed to match the terminal points of the major program segments (grades K-3, 4-6, 7-8, and 9-10).

2. To administer the final instruments to a representative sample of program and non-program students in the four Part C and Part D sites participating in the Career Development Program in order to evaluate its impact on student learning.

The instruments themselves would become measuring devices for comparing intended student learning to actual student learning, not only in the four initial sites but in additional sites in the future. The information derived from the first administration of the instruments would be reported to the Division so that the state leaders could modify program practices in participating school districts if necessary in carrying out their commitment to a high quality Career Development Program.

The tests were developed in the spring of 1973 and were administered in May, 1973 to students in grades 3, 6, 8, and 10 in the one VEA Part C site and the three VEA Part D sites. The report of the findings, Testing the Ohio Career Development Program, was submitted to the Division in August, 1973.

No Major Differences Found Between Program and Non-program Students. Both groups scored well on the tests. There were only small differences in favor of program students on both the cognitive and affective tests in all grades--3, 6, 8, and 10. The small differences were less than what the PSE staff expected they would be; they were less than what the Division hoped they would be. We were not surprised that non-program students could answer some questions, but we were surprised that program students could not answer even more questions, which would have demonstrated extra learning attributable to their being in the program.

The PSE staff examined the data thoroughly, looking for patterns that could explain why program students did not score higher than non-program students, or for patterns that might suggest how the program could be improved. While no clear-cut explanations or patterns emerged, a number of possible interpretations of the findings were offered in the final report. Below is a summary of the interpretations written at that time:

Interpretation 1: No Career Education Is Taking Place. It is possible that career education has not yet been effectively implemented in program classrooms. If so, it would mean that no matter what care and expense were put into developing tests, they would show no differences between program and non-program students.

We are inclined to reject this conclusion based on the 1972-73 evaluation of the program in local school districts, where local project leadership activities were highly visible and where there was enough evidence of career education in the classrooms to make PSE observers believe that students were learning.

Interpretation 2: Other School Curricula Teach Career Concepts. The content of the Career Development Program has much in common with other school curricula. That is, the relationship between self and environment, ideas about the world of work, concepts of economics, skills in decision-making, and other areas of concern in career development also appear in one form or another in many other subject fields. Thus the students in non-program classes have elaborate opportunities to learn that content in the study of various subjects at various grade levels.

While the overlap of career development content with the content of other curricula does not fully explain why program students did not demonstrate extra learning on the tests, it seems reasonable to believe that it helps explain why non-program students did so well.

Interpretation 3: Non-School Sources Teach Career Concepts. There are many ways for students to learn career concepts outside of school: at home, at play, at camp, at church, while reading, while watching television, with friends, with adults, and so on. This is especially true for the important career concepts measured by the tests. Society does not leave those important concepts to chance; it transmits them to young people in many ways. Since students outside the Career Development Program are exposed to these strong non-school influences, they learn enough to score about as well on the tests as program students.

While this interpretation does not account for the absence of any extra career learning by program students, it may explain why non-program students did well on the tests.

Interpretation 4: Program Students Cannot Fully Demonstrate Their Learning on the Tests. The tests reflect the program as specified in the State Curriculum Guides for grades K-6, 7-8, and 9-10. But the tests may be a better fit to the State Guides than to what is actually happening in local program classrooms. Perhaps the program students cannot fully demonstrate on these tests what they have been learning--and thus they cannot demonstrate their superiority to non-program students. That is, perhaps the tests do not fully reflect all that is being taught and learned in the program classrooms.

Given the fact that local programs often vary significantly from state guidelines, this interpretation seems reasonable, at least as a partial explanation of what is happening.

The 1973-74 Observation/Evaluation

Uncertain which of these four hypotheses was true, the Division asked PSE to observe the ongoing program once again in a small sample of sites. In the spring of 1974, PSE staff visited four program sites selected by the Division. At each site, the staff examined the project for its:

1. Quality of project staff leadership.
2. Teacher use of Career Development Program ideas and materials.
3. Student interest and participation in Career Development Program activities.

PSE staff observed classes, accompanied the teachers and students on field trips, participated in other career-related activities, and conducted interviews with project staff, teachers, and students.

Again Career Education Appeared To Be Successful. While there were some variations among the four sites, the PSE staff found that:

1. Local leadership was generally effective.
2. There was evidence of teacher use of program ideas and materials in the classrooms. The evidence was greatest at the elementary level, not as great at the junior high level, and weakest at the high school level.

3. Student interest and participation paralleled teacher interest and participation and accordingly was most evident at the elementary level, less evident at the junior high level, and least evident at the senior high level.

On the basis of these findings, PSE rejected Interpretation 1: It concluded that career education was taking place in the program classrooms. We had seen it in the fall of 1972; we had seen it again in the spring of 1974.

The Evidence of the Observations Versus the Evidence of the Instruments

Were we to believe our eyes or our instruments? Based on the new observational evidence that career education had indeed reached the classrooms, PSE believed that Interpretation 4 given earlier was probably correct. That is, students in the program were indeed learning more than other students but it was something that they could not fully demonstrate on the original tests written to match the State Curriculum Guides. (Interpretations 2 and 3--school and non-school sources were teaching much career content to students outside the program--continued to seem quite reasonable as well.)

Field-Based Tests to Supplement Curriculum-Based Tests. PSE believed that the way to verify Interpretation 4 would be to develop field-based tests to match the students' actual learning rather than curriculum-based tests to match the students' intended learning as called for in the State Guides. Presumably, this could be done by going into the field and developing tests on-site--close to the classroom where the actual learning was taking place--rather than at an off-site location where the test developers would have nothing but descriptions of intended learning to guide them.

PSE believed that tests developed in this fashion--in and around program classrooms in the field--would provide the Division with evidence of career learning by discriminating between program and non-program students and showing the superiority of those in the program. Accordingly, PSE suggested that the Division call for the use of a variety of on-site test development methods in a representative cross-section of school districts as a means of creating cognitive and affective test items which would successfully measure the full extent of student learning in program classrooms. Those test items would then be compiled into paper and pencil tests which presumably would discriminate between program and non-program students in grades 3, 6, 8, and 10.

Retaining the Curriculum-Based Tests. As to the original curriculum-based tests built to match the State Guides, PSE believed that they should be revised for future use by the Division. Properly designed, such tests could constitute a description--more exactly, a sampling, of a description--of intended student learning. They could be used for such important purposes as these:

The test instruments themselves could serve:

1. As an "ideal" standard for what students should learn.
2. As a target toward which teachers could direct their efforts.
3. As a criterion against which to compare the eventual content of the field-based tests.

When administered in the future, the tests could produce data to serve:

1. As a measure of the discrepancy between intended learning and actual learning.
2. As a measure of progress from the baseline established for program and non-program students when the tests were first administered in May, 1973. (Only the original, unrevised items remaining in the test could be used to measure progress, of course.)

The 1974-75 Development and Administration of Field-Based Tests

The Division conducted a competitive bidding procedure in the late fall of 1974 to select a contractor to develop and administer field-based tests. A contract was awarded to PSE in December, 1974 to carry out the work requested by the Division.

The scope of work entailed:

• ITEM WRITING	in 2 sites
• PILOT TESTING	in 4 sites, including the two ITEM WRITING sites
• FINAL TESTING	in 7 sites, including the four PILOT TESTING sites

Items were written and pilot tested in Akron, East Muskingum, Mansfield, and South-western City. Final tests were administered in those four sites plus the three VEA Part D sites: Cincinnati, Cleveland, and Springfield.

While the two sites selected for item writing were not as fully representative of the state program as three sites we had originally hoped to use, they nevertheless had demographic variations similar to those in the state as a whole. Moreover, both sites selected for item writing had high quality Career Development Programs and therefore were rich sources of ideas for test items.

The best evidence of whether the final tests were sensitive to program activities statewide would come from administering the final tests not only in the four sites in which items had been pilot tested but also in Ohio's three VEA Part D sites, none of which were involved in the creation of the tests.

Procedures. PSE employed a variety of methods to write items in two sites. Each item was then put into a pilot trial in the two item-writing sites and in two additional sites. It was administered in the program classrooms for which it was written, in other program classrooms, and in non-program classrooms. Those items which discriminated most strongly in favor of program students were compiled into a 60-item final test for each of the grades 3, 6, 8, and 10. Those tests were then administered to program and non-program students in grades 3, 6, 8, and 10 in seven cities: The four pilot testing sites and the three Part D sites.

The procedures involved these steps:

ITEM WRITING

1. Preparing the two item-writing sites for the impending on-site activities.
2. Conducting the on-site item writing.
3. Polishing and refining the items written on-site.
4. Selecting from the earlier curriculum-based tests any supplementary items which matched local activities.

PILOT TESTING

5. Administering the items in the four pilot testing sites.
6. Scoring and analyzing the items in the four pilot testing sites.
7. Compiling the discriminating items into a pool for possible inclusion in the final tests.
8. Compiling the non-discriminating items (plus any which discriminated against the program students) into a pool to send to the Division at the close of the study.
9. Selecting the most discriminating items for the final tests.

FINAL TESTING

10. Administering the final tests.
11. Scoring and analyzing the final tests.
12. Reporting the results.

Field-Based Tests Revealed Career Education Learning. Results from the administration of final tests in seven sites yielded the following findings:

1. Program students scored higher than non-program students in grades 3, 6, 8, and 10 on both cognitive and affective tests.
2. The superiority of the program students was statistically highly significant on most tests.
3. Program students showed their greatest superiority over non-program students in grade 3, next in grade 6, next in grade 8, and last in grade 10.
4. Program students showed greater superiority on the cognitive tests than on the affective tests.
5. The typical student--both program and non-program--found the cognitive tests relatively easy, although not as easy as the affective tests.
6. The typical student--both program and non-program--found the affective tests even easier than the cognitive tests.
7. The fact that the typical non-program student answered 60-70 percent of the items correctly indicates that the content of the program is not unique to program classrooms but is being taught in non-program classrooms as well. While the program students are learning more of it, the non-program students are learning much of it.
8. Regardless of the fact that non-program students scored well, program students clearly scored even higher than non-program students at all grade levels on both cognitive and affective tests.

The results throw light on the four interpretations hypothesized in 1973 when the curriculum-based tests failed to show differences between program and non-program students (see pages 6-8):

> Interpretation 1: No Career Education Is Taking Place. This interpretation can now be firmly rejected.

Interpretation 2: Other School Curricula Teach Career Concepts. This interpretation continues to seem quite reasonable. Some of the test items that non-program students answered correctly appeared to require school-taught knowledge.

Interpretation 3: Non-School Sources Teach Career Concepts. This interpretation continues to seem especially reasonable. Many of the questions that non-program students answered correctly required information they could have learned outside of school.

Interpretation 4: Program Students Cannot Fully Demonstrate Their Learning on the Tests. This interpretation can now be fully accepted. It is clear that the 1973 curriculum-based tests did not let the program students demonstrate their superiority as revealed by the 1974 field-based tests.

Based upon these findings, the Ohio Department of Education Division of Vocational Education asked PSE to continue to refine field-based test instruments and to use them in conducting a product evaluation of the three VEA Part D sites of Cincinnati, Cleveland, and Springfield. Because PSE's past observation/evaluation efforts have also yielded information useful to state and local career development staff, the Division also asked PSE to conduct site visits and report on program process in these three sites. The remainder of this report describes these evaluation efforts and PSE's overall conclusions and recommendations.

INTRODUCTION

The 1975-76 Overall Plan

The completion of the 1975-76 school year marked the ending of the VEA Part D grant to the Ohio Division of Vocational Education for a comprehensive career education program, K-10. In response, the Division issued a call for competitive proposals to evaluate the three Part D project sites. PSE submitted a competitive proposal to the Division. It described a plan for evaluating three sites by conducting a combined process and product evaluation during the 1975-76 school year. The project staff's leadership and classroom teaching activities were the subject for the process evaluation: student learning in both the cognitive and affective domains in grades 3, 6, 8, and 10 were the subject of the product evaluation.

A by-product of the work during the 1975-76 school year was a test administration manual which the Division can use for administering student tests in other projects at a later date.

Conducting Site Visits. The proposal called for PSE staff to conduct two-day site visits to the three VEA Part D sites during the period of late February to late March.

During the site visits, PSE staff interviewed the local program directors, school administrators, classroom teachers, and students. They examined instructional materials being used and visited selected classrooms to observe the program in action.

Data for these observations were reported individually to the three cities.

Evaluating Student Learning. The proposal also called for a pre-test/

post-test evaluation design for students in grades 3, 6, 8, and 10 who attended program schools and a selected number of non-program schools.

The four cognitive and affective test instruments PSE administered to students in grades 3, 6, 8, and 10 at the end of the 1974-75 school year were reviewed and modified to: 1) increase the discriminating power of the tests; 2) lengthen the affective section of the tests; and 3) eliminate unimportant items.

PSE supervised all production, printing, and packaging of these tests for administration in Ohio. Although the tests were administered by local personnel in Ohio, PSE monitored the administration by helping to establish comparability of experimental groups and control groups (program and non-program groups), determining the sample size and composition, and preparing test administration materials.

The results of the pre-test described the status of the program and non-program students as of October, 1975. The pre-test results and post-test results were compared and examined for statistically significant differences which demonstrate appreciable growth on the part of the program students. Data were also analyzed to determine relative growth across the seven developmental areas. The post-tests were used descriptively to report the final status of the program and non-program students at the close of the 1975-76 school year. This information can be useful to local program directors in planning in-service and guiding teachers during the 1976-77 school year. Experimental groups can be compared to control groups using both the pre-test results and the post-test results in a search for statistically significant differences.

Data on student ability, scholastic aptitude, and demographic characteristics known to be related to school learning were examined for their relationships to pre-test status, post-test status and pre-test/post-test growth. These results can be useful to local program directors in understanding differential program effects on different types of students. The remainder of this document describes in detail the procedures used and the findings obtained from the three-site evaluation of career development programs.

EVALUATION OF PROGRAM PROCESS

As a part of its evaluation of Cincinnati, Cleveland, and Springfield, the three VEA Part D funded project sites, PSE agreed to conduct two-day site visits to each city. These site visits were to assess: 1) leadership characteristics of the individual program, and 2) classroom teaching activities of the program teachers. The procedures and findings of these site visits are summarized in the following sections.

Procedures

During the site visits, PSE staff interviewed the local program directors, school administrators, classroom teachers, and students. They examined instructional materials being used and visited selected classrooms to observe the program in action.

The major question to be answered during the site visits was what classroom activities or staff-directed activities were instrumental in making the program succeed. By interviewing several people involved in the program and visiting and observing several activities, PSE found data that indicated the strengths and weaknesses of the individual programs. In conducting these site visits, PSE employed the following procedures.

Preparing Sites for the Visitation. Each program director received verbal and written notification that his or her program would be observed on two specific dates in the middle of March. PSE prepared three qualified members of its staff who were familiar with career education and the Ohio Career Development Program to conduct these observations. PSE determined to allow the program staff to be responsible for arranging interviews and the observations. It was felt that the type of interviews and observations that was planned by the program staff would reflect their leadership qualities as well as the way they viewed their programs. Since this was not a random sampling of people being interviewed about the program, conclusions and recommendations were based on the fact that the program staff chose who was to be interviewed. PSE made sure that they interviewed members of the program staff, school administrators, principals, teachers, and students.

Conducting Site Visits. The actual dates on which the site visits took place were: Cleveland--March 11th and 12th, Cincinnati--March 15th and 16th, and Springfield--March 17th and 18th. In each of the cities, a meeting was held with the program director and individuals that he or she chose to include in the first meeting. During these meetings, the program director described his or her program and the goals that had been set for the 1975-76 school year. From these descriptions, PSE was able to ask questions and lead interviews that would help the program director find out how successfully these goals were being met. In each of the cities, we found that different goals had been set and different methods for meeting these goals.

Following the initial meeting, PSE staff were taken to program schools either by the director or members of the program staff. While in these schools, members of the PSE evaluation team held many formal and informal discussions with program staff. They visited schools which would give them an overview of the program, in other words, the high school and a sample of its feeder junior high and elementary schools. At these schools, they interviewed principals, teachers, counselors, and students. They observed classroom activities and examined classroom and library instructional materials. They also reviewed documents on file at the Career Development offices such as program proposals, objectives, previous evaluation studies, and program records. They also reviewed forms and processes used by the Career Development Program staff.

Conferences were held with the Career Development staff or program directors at the close of the final day of the visitation to share PSE's observations and recommendations regarding program process. A written report describing in detail these observations and recommendations followed the site visits. The following section summarizes the findings of the site visits for all three cities.

Findings

Using the procedures described above, the PSE site visitors obtained much information about program processes. This section includes comments on program design, staffing, in-service education, community support, and each of the three components of the program (Motivation, Orientation, and Exploration). The reader is reminded that these findings are based upon visits made in March and thus, in some cases, refer to facts which have been changed since that time.

Program Design. All three programs are based on the Ohio Career Development Model which is designed to foster student development in the seven areas of Individual and Environment, World of Work, Self, Economics, Education and Training, Employability and Work Adjustment Skills, and Decision-Making. Each program has stated general objectives for students in each of the three components. Career Motivation for students in grades K-6 is designed to help children become aware of the world of work and to develop positive attitudes towards work. Career Orientation for students in grades 7-8 is designed to familiarize students with various aspects of a variety of occupations and to begin to develop an awareness of personal interests and abilities. During this component, students are also taught about the fifteen United States Office of Education occupational clusters. Career Exploration for students in grades 9-10 is designed to help students to begin to make good career decisions. The overall goal of the program is to prepare students for economic independence and an appreciation for the dignity of work.

This is the final year for the VEA Part D funding of these three sites for a comprehensive K-10 Career Development Program. Each district has individually explored ways to ensure the continuation of the Career Development Program after the completion of the 1975-76 year. One program has been actively pursuing other federal money sources while the remaining two are applying to the state for future funding.

In all three cities, the Career Development Program is a vital part of the local school district's curriculum. In at least two of the three cities, the program staff has been instrumental in expanding career education to other areas within the city.

In all three cities, the program has accepted the responsibility of being a model career education program and used its knowledge and experience in helping other areas within its school district or within other districts within the state to develop new Career Development Programs.

Staffing. Following the Ohio Career Development Model, all three sites are staffed by a program director and as few as two or as many as eleven program coordinators. In each of the three cities, these individuals are competent, efficient, and hard-working. To a large extent, they are responsible for the success of the program in each of the three sites.

The program directors are responsible and handle successfully the administrative tasks associated with the program. These tasks include meeting with school administrators, conducting in-service workshops, attending state-wide meetings and providing supervisory assistance for their program coordinators. All three of the program directors were well informed concerning their individual school districts and well aware of what role career education should play in that particular school district.

In most cases, the coordinators assist the program director either as career education specialists in one of the age-level components or as program representatives to an individual school building. In some cases they offer expertise outside of the career education curriculum but within the realm of the school setting such as expertise in curriculum design, in-service education, or evaluation techniques. The role of coordinator is uniquely defined by the school situation in which it is located. In all cases, the coordinators we interviewed were well-informed, capable, and hard-working professionals.

In-Service Education

Each of the three sites has a plan for in-service education. In most cases, several types of in-service education are made available to program teachers. Prior to the 1975-76 school year, each of the sites has been involved with a university-sponsored in-service training session. This year the emphasis is placed on more individual, small group, training sessions. These are usually conducted by the program director or program coordinators and focus on specific problems, developmental areas, or subject areas.

This type of small group in-servicing appears to be very successful in meeting the needs of program teachers, guidance counselors, and other school personnel. Having coordinators or program directors conducting in-service sessions places these program personnel in leadership roles and enables them to influence curriculum decisions, instructional processes, and material selection.

Since the Career Development Program has been active in all three of these program sites for the past four years, this type of small group in-service education appears to be the most effective way of reaching teachers and infusing career education concepts into the existing school curriculum. The teachers we spoke with responded favorably to this type of in-service, although they did not want to give up their one-to-one contact with the coordinators of their buildings or components.

Community Support. Community support is divided between two groups --industry and business support and parental support. Each individual program site has a unique combination of both types of support. In all three sites, the industry and business support runs higher than the parental involvement. Each program site is able to conduct its "hands-on" experience for its high school component with relative ease. Although overall parental support is good for each program, it varies within the program from school to school. In no way does this lack of parental involvement hinder any program, but it is an area in which future efforts in all three cities can be directed.

Motivation Component (K-6). In all three cities in grades K-6, PSE's observations revealed the largest number of classroom activities. A strong ground work of career development concepts is presented at these levels with students participating in the largest number of field trips, speakers, films, as well as infused curriculum lessons. These teachers' efforts should be encouraged and might be maximized by a sequence of objectives from grade level to grade level to guarantee that students would not experience repetition of the same activity or content area as they proceed through the motivation component. The development of these sequence objectives could be made by teachers in the small group in-service sessions as they are being conducted throughout the year.

Orientation Component (7-8). At the junior high level, career development activities vary from program to program. PSE observed a unique approach to career development at this level in each of the three programs. The approaches varied from special career education classes to individual field-based experience for junior high students. In addition to these special activities, each program was making an attempt to provide in-service education to regular curriculum teachers and influencing the infusion of career education concepts into the regular curriculum.

The number of teachers at this particular grade level who are involved heavily in career education is not as large as that in the Motivation level. In all three visits, there appears to be a need for involving more junior high school teachers into the Career Development Program. Possibly, the focus for in-service education should be the seven developmental areas of the Ohio Career Development Program rather than the fifteen USOE career clusters.

Exploration Component (9-10). In two of the three cities, the weakest of the three age level components is the high school component. However, PSE feels that each of the three program sites was making strong headway in making more high school teachers involved with the Career Development Program. PSE found teacher interest and participation apparent in all three high schools. Each program was instrumental in involving the guidance department, the library personnel, and several of the academic curriculum departments in their individual programs. In at least one of the three program sites, the Career Development Program was working closely with academic teachers who were arranging field-based experiences for their ninth and tenth grade students.

There is more and more evidence that the Career Development Program is reaching more high school teachers and consequently, more ninth and tenth grade students. This area, however, is the weakest of all three components and one in which the attention should be directed for future planning.

Summary. PSE found the Career Development Program staffs to be hard-working and effective. These individuals should take pride in their many accomplishments. Each program has used the Ohio Career Development Model as a foundation for building a Career Development Program that is unique to its own situation. Our strongest recommendation for future efforts would be the strengthening of the Orientation and Exploration components. Our observations indicate that students are receiving a strong background in the Motivation component and are ready for a more extensive Career Development Program in the Orientation and Exploration components.

EVALUATION OF STUDENT LEARNING

PSE's second objective in this study was to determine the amount and type of student learning of career education concepts that had resulted from the efforts of the three Career Development Programs by the end of the 1975-76 school year. We wished to use this information to evaluate the success of these efforts thus far and to make recommendations for future program efforts. The procedures used in testing students to gather this information and the findings obtained through these tests are described in this section.

Procedures

The major focus of this part of the evaluation was the amount and type of learning of career education concepts displayed by the Career Development Program students as revealed by tests developed in Ohio. The evaluation design called for a pre-test to be administered in late October and a post-test to be administered in early May. This design offers several types of information. The results of the pre-test were analyzed to produce the description of the status of the program and non-program students as of October, 1975. The pre-test results and post-test results were compared and examined for statistically significant differences which would demonstrate appreciable growth on the part of the program students. Also, data were analyzed to determine relative growth across the seven developmental areas. The post-tests were used descriptively to report the final status of the program and non-program students at the close of the 1975-76 school year. This information can be useful to local program directors in planning in-service and guiding teachers during the 1976-77 school year.

Each local program director received a detailed report on his/or her city. Experimental groups were compared to control groups using both the pre-test results and the post-test results to find statistically significant differences. Data on student ability, scholastic aptitude, and demographic characteristics known to be related to school learning were examined for their relationships to pre-test status and pre-test/post-test growth. These results can be useful to local program directors in understanding differential program effects on different types of students. The following sections describe procedures employed by PSE in instrument development, sample selection, administration, and data analysis.

Instrument Development. During the 1974-75 school year, PSE was involved in on-site career education item development in a number of Ohio cities. During visits to these sites, PSE staff created career education items and pilot tested them with a sample of students. These items deal with career education concepts in each of the seven developmental areas of the Ohio Career Development Model.

Each item was tested on both Career Development Program students and non-program students, in the city where it was created as well as in other Ohio cities. The outcome of these efforts was a pool of career education items in various developmental areas that tested both cognitive and affective learning and showed program students to have knowledge superior to that of non-program students.

From this pool of items, PSE selected the most effective items to construct cognitive and affective tests of career education concepts for students in grades 3, 6, 8, and 10. Each item was selected to appear on one of the four grade level tests because it was judged to be at the appropriate reading level (that is, neither too difficult nor too easy for students at that grade level) and because it revealed differences in student learning between program and non-program students.

Each test included items from each of the developmental areas of the Ohio Career Development Model. These tests were administered in a number of cities including Cincinnati, Cleveland, and Springfield in the spring of 1975. Results were used at that time to make recommendations to these programs.

Instrument Revision

This year, PSE used the results of last year's testing efforts to revise these tests in several respects so that they would yield even better information about student learning. The following review and modification steps occurred:

1. The affective section of each test was lengthened from 20 to 40 items to increase the reliability of this section.
2. Each test was reviewed to locate and eliminate items which did not discriminate between program and non-program students when administered during the 1974-75 school year.
3. Staff of the Ohio Department of Education Division of Vocational Education and representatives of local programs reviewed all items for importance of content, and PSE eliminated any items which they rated as unimportant or neutral.

PSE used the same developmental area assignments that were made during the 1974-75 school year for the items to be used in the revised test. The distribution of items in each developmental area is represented in Table 1. When items were eliminated and replaced by new items, an effort was made to replace the old item with an item from the same developmental area. All seven of the developmental areas are represented in all four grade levels. The number of items within each developmental area was determined by the number of items that discriminated in favor of the program students during the 1974-75 pilot testing. PSE felt that this distribution of items reflected the emphasis being placed by the local programs on each of the seven developmental areas at each of the grade levels.

Each revised test contains 80 items and is evenly divided between multiple choice questions reflecting cognitive content and agree-disagree items reflecting affective content.

The tests, in total, represent cognitive and affective content areas which are appropriate for the grade level, which are judged as important by State and local programs, and which discriminate between program and non-program students. The same instrument was used at each grade level for both the pre- and post-tests.

Sample Selection. PSE's objective was to administer pre- and post-tests to a sample of approximately 375 program and 125 non-program students at each grade level in each school district. We felt that this would be a sufficient sample size to adequately represent program and non-program students even after each group was subdivided by sex, race, etc. For ease and consistency of administration, entire classrooms of students were tested at one time. Therefore, classrooms rather than

Table 1

Number of Items in Each Developmental Area at Each Grade Level

Pre-test / Post Test

Revised 1974-75 Field-based Test

DEVELOPMENTAL AREAS	GRADE 3	GRADE 6	GRADE 8	GRADE 10
Individual and Environment	15	8	12	11
World of Work	18	17	20	12
Self	22	18	15	14
Economics	8	9	6	9
Education and Training	9	12	8	12
Employability and Work Adjustment	4	6	11	10
Decision Making	4	10	8	12
TOTAL	80	80	80	80

individual students were selected to form the sample. Using the following method, we drew a sample of fifteen classrooms of program students and five of non-program students at each grade level to include approximately 500 students in both groups at each grade level from each city.

In order to be able to make comparisons we wished to select similar program and non-program students. Every program school in each district was included in the population from which classroom teachers would be selected. Non-program schools were selected according to the following procedure. PSE asked the local program directors to collect the following information for each of the four grade levels for each school in his or her program: mean reading scores, I.Q. scores, grade point averages, and socio-economic indicators. Where all such information was not available, the program directors worked with those factors available which would best assist in making such decisions. The program directors then attempted to identify an equal number of non-program schools whose student scores most closely matched those of the program schools.

Next, the program directors compiled an ordered list of all teachers' names from program and selected non-program schools at each of the four grade levels. With the assistance of PSE staff, they, then, randomly selected fifteen program and five non-program teachers at each grade level. At the elementary level, the entire class of each of the teachers selected was tested. In grades 8 and 10, either English or social studies teachers were selected so that classes tested would consist only of eighth or only of tenth grade students. In some cases where English or social studies classes combined grade levels, an alternative subject area was chosen.

The identical samples of program and non-program students were used for both pre- and post-tests in order to ensure that the most reliable pre-test/post-test comparison could be made.

Administration. Pre-tests were administered in each city during the weeks of October 29 to November 10, 1975. PSE constructed the test for each grade level and created directions for administering the tests. The appropriate number of copies was shipped to each program director, who was responsible for arranging distribution and administration of the tests in the selected schools. In some cases teachers administered the tests. In others, the coordinators administered the test in their own buildings and in non-program schools. The program directors then collected the completed tests and returned them to PSE for scoring and analysis.

The post-tests were administered during the week of May 3-7, 1976, in order to allow program students the entire school year to benefit from program efforts. Tables 2-4 display the actual number of students tested in each city at each grade level in both the pre- and post-tests.

Data Analysis. Data for the cognitive and affective tests were analyzed separately by pre-test or post-test form, city, and grade level. This allowed PSE to compare the post-test results with the pre-test results and to determine what changes, if any, had occurred in the students' cognitive learning or affective learning.

For both the pre-test and the post-test, program and non-program scores were obtained for an item, for a group of items (e.g., items that were classified in the developmental area of Self), and for the complete cognitive or affective test sections. In this way, PSE could determine if the changes in program student learning were

Table 2

Number of Program and Non-Program Students Tested at Each Grade Level in Cincinnati

GRADES	PROGRAM STUDENTS		NON-PROGRAM STUDENTS	
	PRE	POST	PRE	POST
3	396	413	114	132
6	386	374	115	139
8	357	236	91	89
10	352	268	114	69
TOTAL	1491	1291	434	429

Table 3

Number of Program and Non-Program Students Tested at Each Grade Level in Cleveland

GRADES	PROGRAM STUDENTS		NON-PROGRAM STUDENTS	
	PRE	POST	PRE	POST
3	361	329	150	144
6	385	391	138	141
8	419	413	93	119
10	302	265	105	97
TOTAL	1467	1398	486	501

Table 4

Number of Program and Non-Program Students Tested at Each Grade Level in Springfield

GRADES	PROGRAM STUDENTS		NON-PROGRAM STUDENTS	
	PRE	POST	PRE	POST
3	360	332	91	79
6	383	355	94	89
8	347	343	130	144
10	333	282	120	108
TOTAL	1,443	1,312	435	420

caused by the program itself or were simply the results of normal classroom learning. Comparisons were also made between various student groups to see if the program was affecting a certain group of students more than another group.

These comparisons were based on the number of program students responding correctly to an item or group of items as compared with the number of non-program students answering correctly that item or group of items. A single-tailed test of significance was calculated to determine if the program has actually caused the positive effect. This significance is represented by a "t" value. Table 5 shows the level of significance of selected "t" values for different population sizes.

The .05 level of significance means that the measured differences between two groups--such as program and non-program--would not occur by mere chance more than five percent of the time, that is, more than five times out of a hundred. Similarly, the .01 level of significance means that the difference would not have occurred by chance more than one time in one hundred. This means that the .01 level is higher or better than the .05 level.

Findings

As mentioned previously, the results for each test administration were reported by item, by developmental area groupings, and by total cognitive or affective test scores for each city, each grade, and each student group. The detailed findings for each city appear in Appendices 2 through 5. A comparison among the three cities appears in the following sections.

Table 5

Level of Significance

Group N	.05 Level	.01 Level
120	1.66	2.36
60	1.67	2.39
30	1.70	2.46
15	1.75	2.60

In general, we will be dealing with the post-test data which shows the status of each individual city at the end of the 1975-76 school year. In some cases, we will be looking at the pre-test/post-test changes that occurred during the current school year.

Student Characteristics. The number and percent of program and non-program students participating in both the pre-test and post-test administrations in each city and the breakdown for various demographic groups appear in the findings sections for each city and are presented in Appendix 2. The pre-test was administered to approximately 1,400 program students and 435 non-program students in each city, while the post-test was administered to approximately 1,300 program student and 439 non-program students in each city. The number of program students participating in both the pre-test and post-test was sufficient to represent the program at the various grade levels in each city. Likewise, the number of non-program students compared to program students for both tests administrations was also large enough at each grade level in each city for the various comparisons which were made.

In all three cities, both the pre-test and the post-test populations contained approximately an even division between boys and girls at each grade level. The distribution between Black and other students and white students for each city varied. In two of the three cities, however, the distribution was consistent among the four grade levels. That is, if the program contained more Black and other students in grade 3, it usually contained more Black and other students in grades 6, 8, and 10 also. The tenth grade program population for each city contained fewer students enrolled in an academic curricula than students enrolled in curricula other than academic.

In two of the three cities, the choice for non-program populations appeared to be as good as we would have hoped to find. The ratio between program and non-program students of various demographic groups, as well as the information provided by the program directors relating to school learning (e.g., I.Q. scores, reading scores, and socio-economic status), indicate that students of both groups--program and non-program--were similar. Therefore, the difference between program and non-program learning can be attributed to program efforts, rather than other learning factors.

Unfortunately, the choice of non-program schools in Springfield did not result in a clear distinction between program and non-program populations for grades 8 and 10. In both of these grades, it was felt by the local program director that the non-program students were also being instructed in concepts concerning career education. Therefore, the program students in Springfield needed to be extremely well informed and hold extremely positive attitudes in order to score better than their non-program counterparts.

For the various analyses which were made of the data, sample size was considered when computing the "t" values. With the exception of the Springield eighth and tenth grade populations, PSE feels that the ratio of program students to non-program students and the information supplied by the program directors indicate that the overall program and non-program groups seem to be as comparable as we could hope to find.

Overall Results. The overall cognitive and affective post-test results show that in all three cities the program students in grades 3 and 6 were able to end the year knowing somewhat more about career education and holding slightly better attitudes toward career education concepts then their non-program counterparts. Students in grade 8 in two of the three cities were also able to end the year scoring somewhat higher than their non-program counterparts on both the cognitive and affective tests. However, the tenth grade students from only one city were able to end the year showing more knowledge or better attitudes than their non-program counterparts. Even though the program groups were able to show more knowledge or better attitudes, the difference between program and non-program scores was statistically significant in the

Cincinnati, Grade 3, Cognitive and Affective tests.
Cincinnati, Grade 8, Cognitive test.
Cleveland, Grade 10, Cognitive and Affective tests.

For these three cases, the program made a measurable impact on its students. In all other cases, it is evident that the program is influencing its students in each city, but not to the extent that their test scores can reflect significant differences between program and non-program learning.

In general, when the program makes a significant impact on the cognitive learning of its students, it also makes a considerable impact on the affective learning of its students. However, in other instances, where the cognitive tests scores of the program students are only slightly higher than the cognitive tests scores of non-program students, the affective scores are relatively close for program and non-program students. In conclusion, when the program provides its students with considerably more information than the non-program students, it is also able to influence the attitudes of its students to a larger extent.

Results for Developmental Areas. In total, all three Career Development Programs are attempting to provide their students with a well-rounded approach to career education. Each program district, as well as the grade levels within the districts, has its own different strengths and weaknesses. Where the program has made significant differences between program and non-program learning, the differences appear in all seven of the developmental areas. In other instances, where the difference between program and non-program learning is not as distinct, the strengths or weaknesses show up in various developmental areas. The strengths and weaknesses of various grade levels in different program districts are discussed in more detail in Appendix 2.

The overall results for all three school districts indicate that the program students are able to answer questions in each of the seven developmental areas on either cognitive or affective content. These results suggest that the programs are attempting to reach all students with each of the seven developmental areas.

Results for Boys and Girls. The results for both the cognitive and affective tests were also analyzed to locate differences between program boys and non-program boys and also program girls and non-program girls. These results for each city are presented in greater detail in Appendix 2.

In general, the post-test scores for program boys and program girls at each grade level in each city were similar. These results indicate that both program boys and program girls are benefitting from the program. In other words, where the program has made an impact on its students, it has influenced the learning of both program boys and program girls to the same extent.

Results for Black and Other Students and White Students. The pre-test and post-test data were also analyzed to determine if the program had more effect on either of two demographic groups: one group contained white students; the other contained all Black and other students. A detailed description of the findings on these two groups in each city appears in Appendix 2.

In summary, when the program was able to make an impact on its students in a certain grade level, it generally was able to benefit both Black and other students and white students to the same degree. In most cases, there was discrepancy between Black and other program students' and white program students' scores on the cognitive and affective tests. The white program students tended to score somewhat higher than the Black and other program students. However, when comparing both program groups to their non-program counterparts, both program groups were able to score higher than their non-program matches an equal number of times. Therefore, it appears that the program is able to supply both Black and other program students and white program students with enough career information and activities to influence their learning and give each group an advantage over the learning of their non-program counterparts.

Results for Academic and Non-Academic Students. At the tenth grade level, a comparison was made to determine how the program had influenced the learning of its students enrolled in different curricula. The tenth grade students were divided into students who were enrolled in an academic/college preparatory curriculum and students enrolled in non-academic curricula (curricula other than academic). The details of this analysis appear in Appendix 2 also.

In all three cities, the academic program students began the year with the slight advantage over their non-academic counterparts. This is not unusual in that academic curriculum usually contains students who are preparing for college and professional careers and, consequently, contains the better students at a given grade level.

Even so, the most dramatic impact of the program was noticed in the non-academic results. For example, in Springfield, the non-academic program students were able to raise their score sixteen points on the cognitive test and eighteen points on the affective tests between the pre-test and the post-test. In general, the program has been able to show a greater impact on its non-academic students than its academic students when comparing their scores on the pre-test and post-test.

As has been mentioned earlier, the tenth grade is the weakest component in two of the three cities. Where it has been able to make an impact on its students, it appears to be affecting the non-academic students more than the academic students. Apparently, the academic students in both program and non-program schools are able to learn about careers from sources outside of the schools. Consequently, the difference between program and non-program learning for academic students is not that great. This leads us to the conclusion that in order for the program to make an impact on its tenth grade students, it must provide the non-academic students with more information and more experiences than their non-program counterparts.

CONCLUSIONS AND RECOMMENDATIONS

Based on our observations in the three program districts and the results of the pre-tests and post-tests, PSE offers these final conclusions and recommendations.

The program staffs in the three districts have been successful in modifying curriculum and influencing student learning to the extent that:

1. Program students in grades 3 and 6 in all three districts ended the school year with higher scores on the cognitive tests than the non-program students from each district.
2. Program students in grades 3 and 6 in all three districts completed the year displaying attitudes equal to or slightly better than the non-program students as evidenced by the affective post-test results.
3. Program students in grade 8 in two of the three districts were able to end the year with higher scores on both the cognitive and affective tests than their non-program counterparts.
4. Program students in grade 10 in one of the three districts were able to complete the year with higher scores on both the cognitive and affective tests than their non-program matches.
5. Program students showed greater superiority on the cognitive tests than on the affective tests.
6. The typical student--both program and non-program--found the affective test to be slightly easier than the cognitive test.
7. At most grade levels in all the districts, the program

students' post-test scores indicate growth in cognitive learning and, to a lesser extent, growth in affective learning.

8. Program students, at all four grade levels in all three districts, were able to answer cognitive and affective questions in each of the seven developmental areas. Each program district, as well as the grade levels within each district, has its own strengths and weaknesses as shown in the individual district's results for developmental areas.
9. In general, in the grade levels where the program has influenced the cognitive or affective learning of its students, it has influenced both program boys and program girls.
10. Although white program students at all four grade levels tend to score higher on the cognitive and affective tests than the Black and other program students; the program in each district appears to have influenced both Black and other students and white students.
11. Although the tenth grade academic students in each district have a slight advantage over the non-academic program students, the non-academic students appear to be benefitting somewhat more from program efforts than the academic students.

These conclusions suggest that to a large extent the program in each district has been able to influence the learning of its students. Each program has made an impact on different groups of students at different grade levels. In general, the program appears to have made slightly more impact on the cognitive learning of its students, than the affective learning. Also, the program appears to have been most successful in the elementary grades, less successful in the junior high grades, and least successful in the senior high grades.

Further conclusions indicate that:

1. For the most part, program directors and coordinators in all three districts have taken on the responsibilities of leadership in career development and have provided their teachers with the necessary information, materials, and encouragement to implement successful Career Development Programs that can show measurable differences in student learning.
2. Program staff have also been instrumental in obtaining support from their local administrators and Boards of Education in varying degrees.
3. In at least one district, program staff have also been able to incorporate career education ideas and concepts into the existing city-wide curriculum, as well as the curriculum of the individual program schools.
4. High quality in-service has been provided through program efforts in each district and continues to be an effective method for reaching teachers and influencing change within the districts.

In summary, program directors and coordinators have proven to be capable of assuming a leadership role in the infusion of career development concepts into their local school districts. They have approached administrators and policy makers and appear to be providing a means for the expansion for career education throughout the district. They should be encouraged to continue to have model programs. The expertise of the individuals involved in each program can provide excellent resources for new programs.

PSE would also offer these additional recommendations for the state to consider in planning future program development.

1, The leaders from these experienced programs could be used in conducting in-service for newer districts. The State Departments could ask individuals who are experienced in career development to act as consultants and assist the newer programs in establishing goals and procedures for their initial attempts in the Career Development Program.

2. The State could use the experience of program staff and teachers in each of these districts in setting up a state-wide committee to develop a conceptual model of career development. This model would define in greater detail the concepts and expected student learning outcomes for students in all eleven grade levels (K-10).

3. Future program development should consider teaching methods and activities that would provide program students with a better learning experience during the Orientation and Exploration components.

4. Consideration can be given to developing methods of instuction and activities for special population groups (gifted, learning disabled, disadvantaged, etc.).

5. The function of guidance and placement personnel in the Career Development Program could be researched with the intention of setting guidelines for the school districts throughout the state.

6. A more definite role for community, business, and labor in relation to the Career Development Program could be investigated so that these resources would be used to the fullest extent by local school districts.

It appears that each of the three VEA Part D funded programs have in the course of four years developed effective comprehensive Career Development Programs and that future program efforts could be directed towards reaching special student populations while resolving special problems that have arisen since the inception of career education in Ohio.

APPENDIX 1

PROCESS EVALUATIONS

POLICY STUDIES IN EDUCATION

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Mid-Year Process Evaluation

CAREER DEVELOPMENT PROGRAM

Cincinnati City School District

Cincinnati, Ohio

March, 1976

A DEPARTMENT OF EDUCATIONAL RESEARCH COUNCIL OF AMERICA

This report contains the results of the observations of the Career Development Program by PSE personnel in the Cincinnati City School District on March 15 and 16th, 1976. A total of six person/days of such observations underlie this report.

The criteria used as the basis for this evaluation were the program objectives and descriptions in the proposal entitled: Demonstration Project In Career Development, submitted to the Ohio Department of Education Career Development Program by Cincinnati.

During the observations carried out for this evaluation, we visited the Cincinnati City School District Education Center, Aiken High School, its two "feeder" junior high schools, and two of the eight "feeder" elementary schools in the Aiken attendance area. We conducted interviews with school administrators, one of the two remaining career education Coordinators, Cincinnati's Associate in Program Evaluation who serves as internal evaluator of the Career Development Program, counselors, teachers, and the students. Classrooms were observed in schools encompassing grades K-10. Curriculum guides were reviewed and a variety of instructional materials were examined.

A conference was held with the Program director at the close of the final day of observations. This report includes much of what was shared with her during that closing session.

Chief Conclusions

1. The Aiken High School attendance area (approximately 8000 students) is in its final year of the Federal Vocational

Education Act Part D funding as a state-sponsored program in career education. It was organized and is operated under the direction of the Division of Vocational Education of the Cincinnati City School District.

The Program has been successful in many ways in incorporating career education concepts into the regular curriculum in the elementary and junior high schools. (It has not been successful in the high school as explained later.) The Program director and staff have been successful in gaining the support of most building principals. Moreover, the Cincinnati Board of Education has supported the career education effort, although it has not adopted career education as its top priority. On balance, we believe that career education will become a permanent part of the Cincinnati curriculum, certainly in the elementary and junior high schools.

2. The Program director is assisted by two career education Coordinators. (A third Coordinator recently resigned and that vacancy will not be filled.) One Coordinator is responsible for the three secondary schools and is assisted by the guidance counselors in those schools. The other Coordinator works with the eight elementary schools and receives help from an Instructional Aide (paraprofessional) in each building. These full-time Aides are usually members

of the community surrounding each school.

The Program director considers these Instructional Aides to be very successful in encouraging teachers to modify the elementary program to assure the changing of students' attitudes toward work, self, and future education. However, while we were making our observations in Cincinnati, none of these Instructional Aides was available to speak with us and to describe his or her activities. We think that the success of the career education program in the elementary schools should more realistically be credited to the efforts of the excellent, foreward-thinking, community-aware principals. Teachers, in general, are hesitant to make changes even upon the suggestion of their professional peers. Thus we find it doubtful that the new ideas for change offered by the Aides, even though they are respected members of the school community, would be readily heeded and adopted by teachers. The principals we spoke with demonstrated a clear interest in and understanding of career education and seemed to us to be the key, thus far, in getting teachers to see the value of career education.

The secondary school career education program took a turn upward in November, 1975 with the arrival of a new Coordinator. She has done much to bring about the usage of the

Orientation and Exploration objectives and activities in programs entitled: C.O.G. (Career Orientation Guidance) program, and SCORE (Shadowing Career Opportunities for a Relevant Education). C.O.G. is a guidance program offered in one junior high school to all seventh, eighth, and ninth grade students each morning in the home room period. SCORE is a simulated and "hands-on" experience effort in the 9th and 10th grades. Unfortunately, both C.O.G. and SCORE are more successful in one junior high school than in the other. Perhaps more important, SCORE is not effective in reaching students in the tenth grade of Aiken High School. In spite of the sincere efforts of the Coordinator and the Aiken High School vocational guidance counselor, the career exploration program at the high school is doing poorly in meeting the objectives of the Program as originally proposed to the Ohio Department of Education.

3. The Cincinnati City School District has been involved in the process of restructuring its educational program to comply with Federal regulations to achieve racially equitable standards in education. Classroom teachers have been transferred from one school to another in a relocation intended to provide racial balance in the teaching staff at the various schools. These transfers have removed from the Aiken attendance area a number of class-

room teachers who were experienced in and enthusiastic about career education. This is evident most dramatically in the elementary schools, where a majority of the teachers have been moved from the schools and have been replaced by a new group of teachers. These new teachers have been undergoing in-service training in career education during 1975-76, a process which is still underway. In time, they presumably will gain experience and be as capable and effective in career education as the transferred teachers. Meanwhile, the transfers have prevented the Career Development Program from building a strong leadership core of people who have been involved with career education classroom instruction over a long period of time. It is true, of course, that transferring experienced career education teachers out of the Aiken attendance area may have helped spread career education to other schools. Thus, it may prove over the long term, to have had a very beneficial effect in advancing career education throughout the Cincinnati City School District.

Another move in Cincinnati which has an especially interesting potential benefit for career education is the establishment of "alternative schools." Cincinnati is establishing such schools as another approach to achieving a desirable racial balance. Such schools are intended to demonstrate that the city can offer equal educational opportunities to all students and can attract students of diverse backgrounds.

The "alternative" concept is being used throughout grades K-12. An example from the elementary level would be a school which emphasizes the arts and humanities. Students from the second grade up to the sixth grade who have been identified as especially gifted in music, art, etc. would have the opportunity to attend this school on a full-time basis. Other alternatives are available for junior high school and senior high school students.

For students attending such "alternative" schools, the special character of the offerings should facilitate their career motivation, orientation, and exploration. Moreover, these particular schools should help the school staff, parents, and the larger community gain a better understanding of the value of career education and how it can be accomplished through such arrangements. It appears clear to us that "alternative" schools and career education are complementary and that their interdependence should be fully supported by administrators as well as by career education personnel.

4. In grades K-6, our interviews and observations revealed a number of classroom activities that stress career education concepts and encompass the full range of

developmental areas.

The heavy use of paraprofessional Instructional Aides may be creating two problems for the Career Development Program. The appointment of these special career education assistants may be causing teachers to abdicate their roles as the main career education leaders in their classrooms. They can easily make the excuse that someone else (the Instructional Aides) are responsible for conducting career education and that the professional classroom teacher can abandon it as a matter of personal concern and professional responsibility.

The second problem is that the use of paraprofessional rather than professional staff members may undermine the leadership role of the career education Coordinators. While the Instructional Aides undoubtedly provide a valuable service in helping teachers arrange and conduct trips, invite speakers, and hold other special events which are important for career education--especially those entailing community involvement--the Instructional Aide cannot be expected to substitute for the Coordinator. The Coordinator is still needed to communicate the general concepts of career education, to suggest how career concerns can be infused into all subject fields, to suggest sources of outside help, and to serve as a respected, experienced, professional colleague whose endorsement of and enthusiasm for career education can be contageous to other teachers with similar backgrounds and training.

Parental and community involvement with the school and with the career education program varies from building to building. One school that we visited (a non-graded "alternative" school) enjoys a tremendous amount of parent and community involvement including field trips and visitors to the school. In addition, this particular school offers its students a number of career-related reading programs, audio-visual materials, simulation activities, small business operations, and so on. This school exhibits all of the elements that should guarantee the success of career education. It appears that the determination and leadership of the building principal was the key factor in making this school a lively, exciting, career-relevant place to learn.

Another school we visited (the largest elementary school in Cincinnati) has little parent or community involvement, partly because the building is not located in a place where such involvement can be conveniently arranged. In addition to this disadvantage, the school has a faculty that is largly new because of faculty transfers made to achieve racial balance. In short, the school appears to have little in the way of natural circumstances or available resources which could make it successful in career education. Nevertheless, thanks in large part to the determination and leadership of the school principal, career education is underway. The principal has stressed the need for students to gain positive self confidence and he has conveyed this need to his faculty. He sees in career education an especially suitable means for accomplishing this and he has accordingly encouraged the faculty to operate a career-oriented program. Their response to his leadership is a tribute both to him and to their willingness to build a program despite the lack of readily-available community resources.

The process of career education at the two schools is decidedly different, but we felt positive about what we heard and what we observed at both.

5. In grades 7-8 our interviews and observations revealed rather extensive Career Development Program staff involvement and the presence of numerous career development activities.

The television series "Self Incorporated" produced by the Agency for Instructional Television (AIT) is being used successfully in the seventh grade.

The Career Orientation Guidance Program (C.O.G.) is being used at both schools, but with more success at one. The teachers at the other desire more information and guidance from the career education Coordinator. Some seem to be doubtful as to how they should use the available career education materials with their students. This school made a rather late start in career education this year but appears to be progressing.

Guidance counselors are used with success at both schools. The counselor in the junior high school that has the more advanced program feels that the introduction of the Career Development Program into the school has done a great deal to make classroom teachers aware of what students gain through having career concerns introduced into the various subject diciplines they are teaching. Clearly, the introduction of career concerns into the mainstream of the classroom is a powerful addition to what a guidance counselor can accomplish alone. The counselor stated that "The career concept is true and valid" and offered the opinion that "this junior high school will never be the same." It is obvious to anyone familiar with career education that guidance counselors are in a good position to assist career education Coordinators in communicating with and relating to classroom teachers. Moreover, the counselors have the opportunity to work individualy with students and to assist teachers in various ways. The counselors we met in the Cincinnati junior high schools seemed very interested in career education and appear to be a definite source of support for it.

Principals at both junior high schools have generally positive attitudes toward career education and both serve as "models" to their faculties in their personal participation in all career education activities, including in-service training sessions.

6. The counselors responsible for 9th grade students in both junior high schools are involved in the career education program, chiefly in the capacity of arranging "hand-on" experiences as a part of the SCORE program. Students request the counselors to arrange such experiences; the counselors precede the individual student field visits with group orientation sessions designed to enhance the value of the out-of-school experience.

As indicated above, one junior high school has a more mature, stronger career education program than the other. In the school with the better program, the participation of 9th grade students in SCORE has increased since December. Unfortunately, however, due to some misunderstanding between the Coordinator and the 9th grade guidance counselor in that school, SCORE "hand-on" experiences have not been scheduled for students for April, May and June of this year. Hopefully, the miscommunication will be corrected so that this valuable aspect of career education can be fully used in April, May and June before the 9th graders move into senior high school.

7. As previously mentioned, the Aiken High School 10th grade program is doing poorly in meeting the objectives of the Career Development Program. The school is divided physically between college preparatory and vocational educations sections, and seemingly "ne'er the twain shall meet" philosophically or ideologically. The school's academic teachers evidently envision their role as that of preparing college-bound students, despite the fact that over 50 percent of the 11th grade and 12th grade students are enrolled in vocational courses. Moreover, the teachers appear to conduct their teaching largely within the four walls of their classrooms and make little use of community resources. Such attitudes and practices are understandable, given the origins of Aiken High School. Originally, the school was intended to be a high-prestige academically-oriented college-preparation high school. Over time, many non-college-bound students enrolled and a vocational education wing was constructed to offer courses to meet their needs. The academic faculty has not yet come to terms with the changing role of the school, as vocational enrollment continues to

rise at the expense of academic enrollment. Thus, it is perhaps fair to conclude that not only the philosophies but perhaps even the livelihoods of the academic teachers are being threatened. This may be a special reason for the difficulty the Career Development Program staff has had in interesting the academic teachers at Aiken High School in career education. Whatever the reason, SCORE is not succeeding at this school and career education does not exist. This is unfortunately, especially for future career education plans and efforts in Cincinnati as a whole. The elementary and junior high school programs in the Aiken attendance area are good and improving. To see many of the desires and expectations of parents, the efforts of teachers and administrators, and the enthusiasm and participation of the elementary and junior high school students ignored by what should be the capstone senior high school is truly unfortunate. The program starts well in the lower and middle grades but ends poorly in the upper grades. This is especially unfortunate to the extent that the program is intended to be a model for replication throughout the Cincinnati City School District.

The vocational guidance counselor at Aiken High School expressed certain ideas as to how the program could be turned around next year with some restructuring of the areas of responsibility and the lines of communication within the building. His ideas sounded reasonable. We very much hope that they can be put into effect.

We were not able to meet with the principal of Aiken High School because he was out of town. The general impression we gained while in Cincinnati was that the support of the building principal for career education is critical to its success. Certainly the outstanding programs we saw seemed to be traceable to the leadership and determination of the principals. It may be that the principal at Aiken High School does not yet see the value of career education. Indeed, he may associate career education with vocational education, given the sharp split between the academic and vocational worlds at his high school. Hopefully, in time, the new senior high school career education Coordinator (who arrived in November of 1975) can introduce the elements of career education into the 10th grade. However, the essential elements are SCORE and C.O.G., both of which depend for their success on the willing participation of classroom teachers. Such willing participation is not very likely in the absence of positive support and encouragement by the high school principal.

8. Parental participation in career education differs considerably from school to school. In some schools parents serve as members of advisory committees--either the advi-

sory committees set up specifically for career education or pre-existing advisory committees to which career-minded parents and other community representatives have been added. In other cases, parents participate as speakers, participate in trips, or help out in other ways.

On the whole, the Cincinnati Career Development Program has not been extremely successful in involving parents in its activities. In those cases in which parent involvement was relatively easy to arouse, the Program has benefited from it. We believe that increased parent involvement is desirable and that the Program staff and school personnel should do more to motivate and convince the hard-to-reach parents that career education is not only worthwhile but worth their personal participation.

9. In-service training has been made available to teachers, Instructional Aides, and administrators either through Coordinator-led in-service classes or university-based career education courses and workshops.

The in-service programs are begining to be very well attended and actively sought by classroom teachers and by administrators. They should certainly be continued and, if possible, expanded during the summer of 1976 and during the 1976-77 school year.

The Instructional Aides have been required to attend in-service sessions throughout 1975-76. We are unable to comment on the quality and effectiveness of this training because we were not able to interview any Instructional Aides.

10. The Cincinnati City School District central administration has supported the Career Development Program by including the staff in major meetings of instructional consultants who work in various subject fields, by encouraging good communication between them, and more specifically, by providing for the on-going internal evaluation of career education endeavors through assigning a highly competent Associate in Program Evaluation to it. These moves appear to be indications of sincere interest by the central administration of the Cincinnati City School District in career education

11. The Career Development Program has worked during 1975-76 through a management design entitled Management By Objectives. The plan is a very sound guide to the Program staff in determining what it must accomplish by what points in time and is an equally sound device for monitoring their work. We commend the staff for using this management design seriously and for keeping on schedule and meeting all stated objectives.

The Cincinnati career education administrative staff is small but efficient. The leadership of the Program director herself is a key factor in their success. The director is very knowledgeable about career education and is well aware of the instructional situation in each of the school buildings. We found clear evidence that she maintains excellent rapport with the individuals we interviewed. There is a decidedly good working relationship between her and teachers, counselors, and administrators in all the buildings we visited.

The director is ably assisted by two Coordinators who serve as direct links with the schools. Inasmuch as the 1975-76 school year is now winding down, it may not be necessary to fill the vacant position formerly occupied by a third Coordinator. But we feel that at least one Coordinator is needed for grades K-6, another for grades 7-8, and another for grades 9-10. Certainly, given what we have observed earlier about the situation in the 9th grade and 10th grade, the need for two Coordinators for grades 7-10 is apparent. Adding a third Coordinator would of course facilitate more frequent personal contact between the Program staff and individual classroom teachers.

Finally, as we pointed out earlier, the elementary and junior high programs are working well, but the senior high program leaves much to be desired.

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Mid-Year Process Evaluation

CAREER DEVELOPMENT PROGRAM

Cleveland City School District
Cleveland, Ohio

March, 1976

A DEPARTMENT OF EDUCATIONAL RESEARCH COUNCIL OF AMERICA

This report contains the results of the observations of the Career Development Program by PSE personnel in the Cleveland City School District on March 11th and 12th, 1976. A total of six person/days of such observations underlie this report.

The criteria used as the basis for this evaluation were the process objectives stated in the Cleveland Career Development Program proposal.

During the observations carried out for this evaluation, we visited the Cleveland City School District administration building, Glenville High School, its three "feeder" junior high schools, and three of the 14 "feeder" elementary schools in the Glenville attendance area. We conducted interviews with school administrators, career development Coordinators, teachers, and students. Classrooms were observed. Curriculum guides were reviewed and a variety of instructional materials were examined.

The Program director or a representative from the Program staff accompanied us to all of the buildings, and we were joined on the second day by Ohio's state director of career education. Travel time between the different schools was used to share with the local and state officials many of our observations and conclusions regarding Cleveland's Career Development Program. A conference was held with the Program director and Program staff at the close of the final day of observations. This report includes much of what was stated either directly to the local and state officials or in the meeting with the Program staff.

Chief Conclusions

1. The Glenville area (approximately 12,000 students) is in its final year of the Federal Vocational Education Act Part D funding as a state-sponsored Program in Career Education. It was organized and is operated under the direction of the Division of Technical-Vocational Education of the Cleveland City School District.

   To date the program has been very successful in incorporating the Career Development Program into the existing school structure so that it will persist beyond the end of the VEA Part D funding. The Program director feels very confident that career education has become a permanent part of the Cleveland City School District curriculum and our own observations confirm that confidence.

   Indeed, it is commendable that career education has already begun to move outside the Glenville area into other sectors of Cleveland. The Program staff already has been called on to offer in-service training to faculties in other schools.

2. The Program director is assisted by eleven career education Coordinators (seven in the fourteen elementary schools and one in each of the four secondary schools). Each Coordinator has an office or a resource room in each of the buildings that he or she serves as career

Some of the elementary Coordinators not only provide services and information to teachers about career education but are also available to demonstrate career teaching or to assist in career teaching.

The Motivation program appears to have a well-rounded structure involving all of the seven developmental areas such that each child at each grade is exposed to all seven of the areas throughout the year.

In most cases, practices that have proven successful in individual classrooms are shared with other teachers via a newsletter that is produced by the building career Coordinator. These newsletters are pleasant to read and appear to be a good way of motivating the not-too-interested teacher into career education.

4. In grades 7-8, interviews and observations revealed extensive Career Development Program staff involvement and the presence of numerous career development activities in the classes. Students are given an opportunity to investigate careers related to their own interests. Curriculum units have been changed to emphasize careers and how those curriculum units are related to the USOE career clusters.

Along with their role as career education leaders, the Coordinators assist the teachers in their individual schools by soliciting field trip visitation sites; developing field trip, assembly, and visitation schedules; planning assembly programs; and providing liaison between school staff, administrators, counselors, and other teachers in arranging and constructing program activities. These services to the teachers have been well received and are well spoken of by the teachers we interviewed during our observations.

The Coordinators have also been instrumental in incorporating career education into the existing curriculum for the Cleveland City School District, especially in the elementary grades. They have developed along with teachers and department chairpersons sample curriculum materials and teaching units infusing career content into various subject fields.

3. In grades K-6, interviews and observations revealed a great number of classroom activities. Students are being taught positive attitudes about work, toward themselves, and toward others through the infusion of career motivation activities into various subject areas.

   The elementary school career education resource rooms are used actively and well.

education Coordinator. These offices or resource rooms serve as a good tool for signifying the importance of career education in each building and making it easier for teachers and students to locate information and obtain advice. The school administration has shown strong support for career education by providing classrooms or office space for Coordinators in each of the buildings.

The Program Coordinators have been very successful in meeting the process objectives of Cleveland's Program proposal. The majority of the Coordinators have been with the program since its inception and possess a thorough knowledge of career education and how to implement it in a school system. These Coordinators have taken on a leadership role by providing required in-service training a number of times each year to the teachers in their particular school buildings. The in-service training is voluntary for the teachers and has been very successful in all three levels (Motivation, Orientation and Exploration). Many of the Coordinators are recognized throughout the community as experts in career education. Some are called on to serve on committees or to speak at functions outside of the Glenville area.

It is evident that the business and industrial community in Cleveland is supporting the Career Development Program in the junior high schools. Speakers visit classrooms and talk with students about careers and the world of work. At least one of the junior highs had its career day in which members of the business community came to the school and talked with small groups of students about their various careers. This seems to have been well received by students, parents, teachers, as well as the business community.

Although not every teacher on the 7th and 8th grade level is thoroughly involved in career education, those teachers we observed were conducting career education activities of a very sophisticated nature.

On the junior high level, career education may not have developed to the point where it can be said that each student on the 7th and 8th grade level is receiving an equal amount of career education across all seven developmental areas. It is not easy to get junior high school teachers involved with career education. Possibly special efforts should be made to provide more in-depth in-service. Also, the possibility of having the guidance counselors impart career information to students is worth exploring.

5. In grades 9-10, interviews and observations revealed a very extensive involvement in the Career Development Program by staff and administrators. It was evident that the majority of the teachers are involved in career education. The career exploration Coordinator could walk down the hall and tap any teacher on the shoulder and ask if there were any career education going on in his or her class that the visitors could observe. Very few teachers commented that nothing was going on in their classes at that particular time. It would be safe to say that almost every 10th grade student is receiving career education in most of his or her classes, no matter what course of study he or she is enrolled in.

A close relationship between the business/industry community and the school was in evidence. Many field trips are conducted and many speakers are used. Cleveland has a wealth of business/industry opportunities readily available and it appears that Glenville is fully using as many of these as possible. Glenville has no trouble in providing "hands-on" experiences for as many students as want them.

The guidance department appears to be receptive to the Career Development Program. Counselors use the Ohio Vocational Interest Survey (OVIS) and the General Appitude

Test Battery (GATB) with students in the exploration program. Positive attitudes about self and work are developed and/or reinforced through individual and group counseling sessions.

The career education offerings in the instructional media section of the library have been increased. Moreover, the students use them.

Current occupational information is made available to the students in newspapers, leaflets, facts sheets, etc. in the career education office. A student simply has to walk in and pick up the information that he or she desires.

6. Career Development Advisory Committees have been set up and are used, but parents are not as involved as the school personnel would like them to be. Even though there is a lack of parental participation, the school principals and Coordinators express the feeling that the parents are increasingly in agreement with the purposes of career education, now that they understand them. Many college-oriented parents were resistant to the seemingly "vocational education" emphasis at first, but there is now evidence that they are less sceptical and are even somewhat appreciative of the school's effort to make education more meaningful for their children. Students are sharing their occupational ideas

with their parents and are seeking direction from the school as to what activities would be appropriate to learn more about their fields of interest.

In contrast, business and industry involvement in committees and other activities is excellent.

7. Curriculum development by teachers and department chairpersons with the assistance of career education Coordinators has proceeded very well. Some teachers are still slow to try the new curricula and materials, but the number has decreased remarkably since the beginning of the current school year.

8. The Cleveland City School District administration has been not only supportive but instrumental in implementing the Career Development Program in the Glenville attendance area. The Program director has been able to move across curriculum boundaries and grade levels freely. Consultation services are provided by the school district's guidance and subject matter supervisors. The Director of the Division of Technical-Vocational Education expressed his full support of the program and views it as a new and valuable addition to local instructional efforts. The Superintendent includes statements about career education in many of his addresses to groups and in his weekly bulletin to district personnel. Public records are

> available which will show the kinds and numbers of business and industry involvement with the Glenville area schools. The district's Division of Research and Development is responsible for and fully used in the internal evaluation of the program.

The Career Development Program staff is confident, efficient, hard-working, and very productive. They have given superb guidance to the educators in their area and have done an excellent job of motivating them toward good career education efforts.

All of them are communicating very effectively with members of the community whose daily work is outside the sphere of formal education. The combined efforts of the staff and concerned citizens are aiding in the orientation of the Glenville area students to the world of work through education.

The career education Coordinators, along with the Program director and their colleagues, are to be commended for the excellent manner in which they are fulfilling the objectives of the Cleveland proposal. Through their experiences, they have developed a great amount of expertise that we hope will be fully recognized and used as Career Development Programs are begun in other areas in Cleveland.

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Mid-Year Process Evaluation

CAREER DEVELOPMENT PROGRAM

Springfield City School District

Springfield, Ohio

March, 1976

A DEPARTMENT OF EDUCATIONAL RESEARCH COUNCIL OF AMERICA

This report contains the results of the observations of the Career Development Program by PSE personnel in the Springfield City School District on March 17th and 18th, 1976. A total of six person/days of such observations underlie this report.

The criteria used as the basis for this evaluation were the program objectives and the description of planned activities stated in the proposal entitled: Career Motivation, Orientation, and Exploration; an Ohio Career Development Program, submitted to the Ohio Department of Education Career Development Program.

During the observations carried out for this evaluation, we visited the Springfield City School District administration building, South High School, two of its five "feeder" junior high schools, and two of its ten "sending" elementary schools. We conducted interviews with school administrators, career education Coordinators, teachers, counselors, and students. We also observed instructional activities in classrooms. We examined curriculum guides and a variety of instructional materials.

We held a closing conference with the Program director at the close of the final day of observations. This report includes much of what we said to the director during that closing session.

Chief Conclusions

1. In the Springfield City School District, the South High school attendance area (approximately 9,400 students) is in its final year of the Federal Vocational Education Act Part D Funding as a state-sponsored program in career

education. As a result, both the project staff and the school official to whom they report--the Director of Curriculum and Instruction--have been giving attention to how the program can be continued during 1976-77 and beyond.

Two possibilities are open to them. The first is that additional Federal funds can be obtained from some source to continue career education, perhaps with emphasis on a special population such as the gifted or perhaps embedded in some other aspect of the curriculum such as consumer education. Accordingly, both the career education Program Director and the Director of Curriculum and Instruction have prepared proposals soliciting Federal funds.

The second possibility is that, in the event outside funds cannot be obtained, career education can be continued with support from the Springfield Board of Education. Accordingly, the local officials responsible for career education have been working to incorporate career objectives into the present instructional program and to absorb career personnel into the regular school staff. As a part of this endeavor, an attempt is being made to correct some of the existing weaknesses in career education.

Both the Program Director and the Director of Curriculum and Instruction deserve to be commended for looking well ahead to 1976-77 and seeking to maintain career education in one way or another.

2. The Program director is assisted by eight Program Coordinators. All but one of the Coordinators are housed in the main career education office, which is located in the Springfield City School District administration building. One person--the Coordinator responsible for the 10th grade exploration program--is housed in South High School.

   The fact that seven of the eight Coordinators are located in the administration building limits their accessibility to the teachers they service in the individual schools. In most cases, the Coordinators have designated certain days when they will be in each building and have made a genuine attempt to see as many teachers as possible during that scheduled day. Nevertheless, a few teachers indicated that they did not see their building Coordinator as often as they should. But teachers who expressed that opinion were willing to accept partial blame for this situation in that they did not often seek out the help of their Coordinator.

   The Coordinators themselves appeared to be satisfied with the locations of their offices and seemed to be willing to take the extra time required to drive from their offices to a school and from one school to another.

We believe that it is important for Coordinators to be located in or very close to the school buildings they serve. The incidental contact with teachers, counselors, librarians, principals, and paraprofessionals--at a coffee break, at lunch, in a few moments before school or after school, before, during, or after faculty meetings, while driving together to and from school, and so one--provide opportunities for informal, often unplanned, but nevertheless significant communication. The personal relationships as well as the idea exchange that takes place under those circumstances are advantageous for the expansion of career education.

We understand, of course, that the Coordinators need to communicate with each other and with the Director to exchange ideas and to plan and coordinate their work. However, we believe that periodic meetings--perhaps every week or two--would be sufficient for this purpose. Moreover, if such meetings were scheduled after regular classroom hours--say from 3:00 p.m. to 5:00 p.m.--they would not separate the Coordinators from the teachers in their buildings.

For all these reasons, we recommend that each Coordinator be housed in one of the schools he or she serves.

Each of the eight Coordinators has special strengths that are well used in the Career Development Program as well as in the overall program of the Springfield City School District. Some of the Coordinators are especially skillful in in-service education; another has good organizational abilities; another has a background in psychology; another is particularly effective in working with people; others are good at curriculum development. We mention the Coordinators in some detail because they are the backbone of the Program and because the majority of the funds go for their salaries and their activities. We found most--but not all--of the Coordinators to be effective and productive.

3. As a part of an internal evaluation study, the Springfield Program staff surveyed teachers, asking them to comment on the amount of career knowledge they possessed, the degree to which they had incorporated career education into their curricula, and the type of training they needed and wanted. The results indicated that over 80 percent of the teachers are involved to some degree in career education and that most of them want further information about it.

   In our interviews with the teachers, some of them expressed the desire for more personal contact with the Coordinators. They did not ask that in-service training be eliminated, but simply that the Coordinators be more available to work with them individually in applying career education in their own classrooms. We recognize the economies of scale available through training teachers in groups and we recognize the benefits of having teachers exchange ideas at such sessions. But our own experience has been that individual contact is the most influential way of dealing with teachers--just as it is with students. Individual contact at the teacher's convenience and directed to his or her specific need for ideas or materials or assistance in arranging for trips and speakers is the most effective technique a Coordinator can use. It is particularly helpful as a follow-up for group in-service training sessions.

The Program staff has begun to use the information obtained from the survey in determining the content of in-service sessions conducted by individual Coordinators for individual buildings. In some cases the Coordinator has presented career education ideas and materials at general-purpose teachers' meetings. (A number of teachers pointed out they had become more aware of career education through what Coordinators had said at general meetings, even though they had not attended any in-service sessions.) This seems to be a good way to make teachers aware of career materials and services available from the Coordinators.

It seemed quite clear from our interviews with teachers as well as from the results of the survey conducted by the Program staff that teachers in the Springfield City School District are quite receptive to the purposes of the Career Development Program and are looking to the Coordinators for leadership, instruction, and assistance.

4. In grades K-6, our interviews and observations revealed that the curriculum has been designed to incorporate activities which are related to the seven developmental areas in the Ohio Program. Career motivation is evident, particularly in special units prepared by classroom teachers. Moreover, successful classroom practices are being shared between teachers. It is quite beneficial for teachers to share successful classroom practices; new methods and new materials do not seem quite as foreign when someone in whose judgment a teacher has confidence relates how successful they have been in that person's classroom.

   The Coordinators deserve to be commended for scheduling special workshops in individual schools, sometimes at individual grade levels, in response to specific requests for information and help. These tailored workshops for small groups of teachers with focused interests are a good supplement to and quite possibly are more beneficial than larger, general-purpose meetings and workshops dealing with career education. Their efficiency lies, of course, in the fact that the information presented can be targeted to the audience and that all members of the audience can use most of what is said. They also offer an excellent chance for the enthusiastic endorsement of career education by one teacher to affect the attitudes of other teachers, since the entire group is working in the same school building, and perhaps at the same grade level, under the same general conditions with the same kinds of students. Thus the testimony of a teacher can be quite influential on the views of other teachers similarly situated.

5. In grades 7-8 our interviews and observations indicated that the Career Orientation Program relies not only on classroom teacher participation but also on a one-semester course called Values and Decision-Making at the 7th grade level and a one-semester called Careers and Society at the 8th grade level. Having two seperate courses offered to all 7th and 8th grade students insures that every 7th and 8th grade student will receive a certain amount of career education during the junior high school years.

   There is, of course, a risk in this kind of special scheduling of career instruction. It can provide regular classroom teachers with an excuse for not incorporating career content into their curricula. They can easily say that career education is being taught in specially-scheduled classes and that it is not their responsibility. Thus it is particularly important in a program that uses this type of scheduling that the Coordinator serves all teachers in the building, not just the "career education teachers" responsible for those special classes. In one of the Springfield junior high schools, the Coordinator is clearly reaching most of the teachers. In the other, it is not so evident.

Since the Coordinators are not housed in the junior high school, one advantage of having these special "career education teachers" is that they can serve as internal spokesmen for career education in faculty meetings, in the teachers' lounge, and around the lunch table.

Most guidance counselors in the two junior high schools work very closely with the Career Orientation efforts of the teachers and the Coordinators. This is quite beneficial in that the guidance counselors are somewhat more accessible to the teachers--and to the students, of course--than the Coordinators themselves can be.

The libraries contain career information that may be used by students on their own initiative but is more likely to be used by students under the direction of a classroom teacher. That is, at present, most students do not have the maturity to initiate their own career research projects without teacher guidance.

The principals of both the junior high schools were very conversant with career education and were quite willing to see it implemented in their schools. It has been our observation in visiting many career education programs nationwide that the leadership and support of the building principal is virtually decisive in determining whether career education will be successful. The Program director and the Coordinators in Springfield deserve to be commended for leading the school principals to give positive support for career education.

Support from the business community surrounding the schools is also essential for the success of career education. It was evident that both junior high schools have been able to arouse the support of the business community in stimulating business leaders to speak at school functions, to open their stores and plants to students for field trips, and to supply relevant and pertinent information for students about the career areas in which they conduct their business. Again, the director and the Coordinators, along with the junior high school principals and teachers, deserve to be commended for this achievement.

6. In grades 9-10, our interviews and observations revealed that a concentrated effort is being made to provide 9th and 10th grade students with at least one if not three "hands-on" experiences.

   A computer terminal is located in the high school and is used to aid 10th grade students in expressing job preferences and thus in locating settings in which they will have experiences.

   The use of the computer appears to be an excellent means not only for expediting the process but also of motivating students to choose a "hands-on" experience. The Springfield City School District appears to be very close to its objective of providing at least one "hands-on" experience for all 10th grade students.

   The Ohio Vocational Interest Survey (OVIS) is used by 9th grade counselors to help all students assess their interests, but Springfield personnel consider the OVIS reading level to be too high for many 9th grade students. However, we got no indication that the Career Development Program staff was doing anything currently to modify this situation, as by seeking an alternative to OVIS.

   Although many of the 9th grade and 10th grade teachers we interviewed spoke favorably about career education and many of them were able to mention some career activity they had conducted in the past, most teachers were not able to point to a current or recent classroom activity dealing with careers.

The Coordinator has chosen to work with the various academic and non-academic departments to introduce career concerns into the high school rather than working with individual teachers. He has been most successful in using this approach with the English department, in which all 10th grade students this year are being provided the experience of making a job analysis under the direction of their English teachers.

Given the favorable expressions about career education made by the individual teachers we interviewed--teachers in departments other than English, incidentally--we believe that the Coordinator would meet success in working with individual teachers in other departments, even though an entire department may not yet be ready to embrace career education. Given the autonomy of individual classroom teachers, despite their allegiance to their own academic and non-academic departments, we can believe that a "broken front" approach in which some teachers moved out ahead of others might be effective.

7. Throughout grades K-10, the Coordinators are doing a generally good job of assisting teachers through formal in-service training programs and, to a lesser degree, through individual contacts. The Coordinators not only perform a leadership role, as by giving in-service training, but also perform a service role as by procuring materials and supplies for teachers as well as by arranging schedules for field trips and on-site explorations.

   The acceptance of the Coordinators as specialists in fields outside of career education as well as within career education has enabled the Program to be represented on a number of district-wide committies concerned with curriculum modification and textbook selection.

   The Coordinators, as indicated earlier, have been involved in the internal evaluation of the Program by administering survey instruments to determine teachers' attitudes and needs and by engaging in analyzing the survey results as a means of determining the effectiveness of their work.

8. The Program director is highly regarded by those whom we interviewed. His judgment is respected and his raport with his own staff and with administrative personnel both in the central office and in the individual buildings is quite good.

The director has shared information about the Springfield Career Development Program with interested educators throughout Ohio and, indeed, throughout the United States. That information has served as foundation material for a number of other school districts in implementing their own career education programs.

9. The Director of Curriculum and Instruction expressed his full support for the program in his conversations with us and his satisfaction with the administrative techniques of the Program director and with the work of the Coordinators.

Generally, the Springfield City School District Career Development Program is doing a good job in meeting its stated objectives. The Program staff is doing a good job in helping teachers incorporate the spirit and content of career education into their classroom activities. School administrators have indicated their belief in the importance of the career education movement. On the whole, the atmosphere for career education in Springfield seems to be quite favorable.

The Program staff is composed of knowledgeable, personable, hard-working individuals. Any small group of people working together usually reflects its leadership, and this one is no exception. The Program director is a sincere, hard-working and especially productive person with a genuine interest in education and its role in preparing students for the world of work.

APPENDIX 2

PRE-TEST / POST-TEST FINDINGS FOR INDIVIDUAL CITIES

Findings for Cincinnati

As mentioned above, the results for each test administration were reported by item, by developmental area groupings, and by total cognitive or affective test scores for each city, each grade, and each student group. The findings for Cincinnati are displayed in the data analysis tables appearing in the text or in the Appendix. (The pre-test data and post-test data appear in Appendix 2.)

The following sections will describe the pre-test/post-test changes that occurred in each grade, as well as changes that occurred in various student groups.

Student Characteristics. As was noted in Table 2 of the Procedures section, the pre-test was administered to 1,491 program students and 434 non-program students, while the post-test was administered to 1,291 program students and 429 non-program students. The number of program students participating in both the pre-test and the post-test was sufficient to represent the program at the various grade levels. Likewise, the number of non-program students compared to program students for both test administration was large enough at each grade level for various comparisons to be made.

For each test administration, the distribution of program students and non-program students at each grade level appears in Table 4. For both the pre-test and the post-test, the program and non-program populations contained approximately an even division between boys and girls at each grade level. Also, for both test administrations, the program population contains approximately 55% Black and other students and 45% white students at each grade level. The non-program population, on the other hand, contains approximately 65% Black and other students and 35% white students

Table 4

Program and Non-Program Student Characteristics

	Program Students				Non-Program Students			
	Pre-Test		Post-Test		Pre-Test		Post-Test	
	N	%	N	%	N	%	N	%
GRADE 3								
Boys	196	49%	217	53%	71	62%	71	54%
Girls	200	50%	193	47%	43	38%	61	46%
Black & Other	221	56%	227	55%	69	61%	87	66%
White	175	44%	186	45%	45	39%	45	34%
GRADE 6								
Boys	196	51%	176	47%	57	49%	66	47%
Girls	190	49%	199	53%	58	51%	73	53%
Black & Other	219	57%	205	55%	37	32%	43	31%
White	167	43%	169	45%	78	68%	96	69%
GRADE 8								
Boys	177	50%	98	42%	47	52%	47	53%
Girls	180	50%	135	57%	44	48%	42	47%
Black & Other	230	64%	130	55%	73	80%	69	78%
White	127	36%	106	45%	18	20%	20	22%
GRADE 10								
Boys	157	45%	135	50%	65	56%	37	54%
Girls	195	55%	131	49%	51	44%	32	46%
Black & Other	195	55%	159	59%	91	78%	55	80%
White	157	45%	109	41%	23	20%	14	20%
Academic	165	47%	86	32%	36	31%	23	33%
Non-Academic	187	53%	182	68%	78	67%	46	67%

at the third grade level, 30% Black and other students and 70% white students at the sixth grade level, and 80% Black and other students and 20% white students at the eighth and tenth grade levels. Both the tenth grade program and non-program student populations are made up of approximately 30% students enrolled in an academic curriculum and 70% students enrolled in a non-academic curriculum.

For the various analyses which were run, sample size was considered when computing the "t" value. Based on the data appearing in Table 4 and the information supplied by the program director concerning comparability, the overall program and non-program groups seem to be as comparable as we would hope to find.

Overall Results. The overall results for the cognitive and affective tests for both the pre-test and the post-test appear in Table 5. The overall results for both the cognitive and affective tests indicate that at most grade levels the program students started the year with a better understanding of career-related concepts and slightly better attitudes towards these concepts than the non-program students. In grades 3 and 10, the difference between program and non-program scores on both the cognitive and affective tests was statistically significant and indicates that the program students had a definite advantage over the non-program students in October.

The post-test results on the cognitive test indicate that the students in grades 3 and 8 ended the year knowing significantly more career concepts than their non-program counterparts. The sixth grade program students also completed the year knowing somewhat more than the non-program students, although the difference between the program score and the non-program score

Table 5

Percent of Items Answered Correctly

GRADE	COGNITIVE ITEMS				AFFECTIVE ITEMS			
	Program		Non-Program		Program		Non-Program	
	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test
3	44	49	34	37	61	58	29	45
6	49	56	48	51	67	67	66	67
8	50	55	52	43	62	58	58	52
10	54	42	39	53	66	48	51	62

is not as significant as the differences for grades 3 and 8. These results reveal that not only did the program students start the year with an advantage over the non-program students, but they were able to maintain that advantage and finish the year displaying more knowledge of career education concepts than their non-program matches.

Although the program students in grade 10 began the year knowing considerably more their non-program matches, they were unable to maintain this advantage and to finish the year with significantly higher scores. Instead, the program students' score was considerably lower than the non-program students'. The non-program students in grade 10 ended the year slightly behind where the program students had begun the year. This indicates that the information the program students had received prior to beginning tenth grade placed them approximately a year ahead of their non-program counterparts, but that during the tenth grade year the non-program students were able to catch up and actually score higher on the post-test than the program students.

Similar to the results for the cognitive test, the post-test results for the affective test indicate that the students in grades 3, 6, and 8 not only began the year with slightly better attitudes than their non-program counterparts, but also ended the year displaying slightly more favorable attitudes than their non-program matches. The most significant difference occurs in grade 3, where the program students' score was thirteen points higher than the non-program students' score. As was the case with the cognitive test, the tenth grade program students began the year with significantly more favorable attitudes towards career education than the non-program students but were unable to keep their advantage. The non-program students' attitudes changed considerably during the year, and their score on the post-test was considerably higher than the program students'. The results for the non-program students on the affective test are not surprising in that as these students gained career awareness (as evidenced in the cognitive test results), it would be expected that their attitudes would be influenced also.

In general, the Cincinnati Career Development Program has been very successful in implementing a career development program for students in grades 3, 6, and 8 that can display measureable difference in learning between program and non-program students. Unfortunately, the program has not been as successful in the tenth grade and future program efforts would have to be directed towards this grade level.

Results for Developmental Areas. As mentioned earlier, the results of the cognitive and affective tests were also analyzed by developmental areas. The number of items in each developmental area was presented in Table 1 of the Procedures section. The number of items in each developmental area differed at each grade level. When looking at the results from both the pre-test and the post-test at each grade level, the developmental areas can be ranked by "t" values to show areas in which the program students showed superior knowledge or attitude ("t" values above 1.65); to show areas where the program and non-program students were equally informed ("t" values from -1.65 to +1.65); and finally, to show areas in which the non-program students showed superior knowledge or attitudes ("t" values above -1.65).

The results from the third grade pre-test indicate that the program students began the year with superior knowledge in all seven of the developmental areas on either the cognitive or affective test. As the year progressed, the program students in grade 3 were also able to maintain their superiority. The May post-test results show that the program students were able to obtain statistically significant scores in all seven of the developmental areas. These results indicate that not only did the program students begin the year knowing considerably more than their non-program matches, but that the instruction they received during the year was considerably different from that received by the non-program students. Consequently, the third grade program students were able to receive scores on the May post-test that were considerably different from those received by the non-program students.

The pre-test results for the sixth grade indicate that although the program students were able to answer questions in all seven of the developmental areas on either the cognitive or the affective test, they did not possess superior knowledge or attitudes in any of these areas. The results for the cognitive test indicate that possibly the areas of Individual and Environment, Employability and Work Adjustment Skills, and Decision-Making were weak areas during the October testing. Likewise, the affective test suggests that the areas of Individual and Environment, Employability and Work Adjustment Skills, Self, and possibly Decision-Making are also weak areas for affective learning prior to the beginning of the sixth grade year.

Through instruction and activities during the school year, the program students were able to obtain sufficient career information to enable them to show slightly more knowledge in six of the seven developmental areas on the May post-test. The greatest difference was shown in the area of World of Work where the program students received an overall score that was statistically significant over the non-program students' score. The weakest area was Decision-Making where the program students' score was slightly lower than the non-program students' score. The results for the affective section of the post-test do not display the same gains that the cognitive test results showed. Although program students were able to score slightly better than non-program students in four of the developmental areas, they were unable to score higher than the non-program students in the areas of Employability and Work Adjustment Skills and Self.

Whereas the program was able to supply its students with information and experiences in most of the seven developmental areas, future program efforts should nonetheless continue to stress all the developmental areas and assure that each student receives instruction or experiences that relate to each of these areas. The program appears to be making a good attempt in presenting all seven developmental areas in a cognitive and affective manner and, possibly, by intensifying its efforts, it can also increase program scores.

The eighth grade results for developmental areas indicate that although the program students began the year at a slight disadvantage when compared to non-program students on the cognitive test, the instruction they received throughout the year enabled them to achieve considerably higher scores than their non-program matches in all seven of the developmental areas by the end of that year. The cognitive results for the post-test clearly demonstrate that the program had made an impact on its students in all seven of the developmental areas.

The changes that occurred in attitudes of program and non-program students over the year are not as dramatic as the changes in cognitive learning. The program students began the year with a slight advantage over their non-program matches and ended the year with a slightly greater advantage. The strongest area for the affective results is Economics. In this area, the program students began the year with slightly less positive attitudes than their non-program counterparts, yet they completed the year displaying considerably more favorable attitudes to concepts relating to Economics than their non-program matches.

The pre-test/post-test analysis for this grade level indicates that the program has made a considerable impact on its students. The instruction received by the students and the activities in which they participated were sufficient enough to enable them to score higher than students who had not had the opportunity to participate in the program. The program was somewhat more successful in changing the cognitive learning of its students than the affective learning. Future program efforts should continue in presenting a well-rounded program of career education concepts with some consideration being given to experiences and activities that would influence students' attitudes to a larger extent.

The results for the developmental areas on the tenth grade pre-test indicate that the program students began the year knowing considerably more than their non-program counterparts in five of the seven developmental areas and displaying significantly better attitudes towards the concepts presented in all seven of the developmental areas. This indicates that the program, prior to the tenth grade, had given its students a clear advantage over their non-program counterparts. However, the tenth grade program was not able to add to its students' knowledge and attitudes in the course of the year. Instead, the non-program students were able to catch up to the program students and to surpass them in all seven of the developmental areas on both the cognitive and affective tests in the May post-test. Our visits to the Cincinnati school district indicated that the tenth grade was the weakest area in the program, and these test results confirm our observations. Future program efforts should definitely be directed towards reaching the tenth grade students with more career-related information and experiences that would influence the cognitive and affective learning of the students at this grade level.

Results for Boys and Girls. The results for both the cognitive and affective tests were also analyzed to locate differences between program boys and non-program boys and also program girls and non-program girls. The overall results for the cognitive and affective tests at each grade level for both test administrations appear in Table 6.

The pre-test results indicate that both program boys and program girls began the year with an equal knowledge of career education concepts and equally positive attitudes towards these concepts. This implies that methods of instruction and activities provided by the program could be equally received by program boys and program girls and that neither group had an advantage over the other group at the beginning of the school year.

The post-test results showed that the program made its greatest impact on the cognitive and affective learning of both program groups at the third grade level. Both program boys and program girls received significantly higher scores on the cognitive and affective tests than their non-program third grade matches.

The post-test results for grades 6 and 8 show that although the program students in both groups were able to score slightly higher than their non-program matches in the cognitive test, the difference between program and non-program scores was not large enough to be considered statistically significant. This indicates that to the extent that the program is influencing the cognitive learning of its students at these grade levels,

Table 6

Percent of Items Answered Correctly by Boys and Girls

GRADE	COGNITIVE TEST							
	Program Boys		Non-Program Boys		Program Girls		Non-Program Girls	
	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test
3	44	48	33	36	44	51	36	38
6	48	53	46	50	50	57	49	52
8	47	53	52	40	54	57	52	46
10	53	42	40	52	54	42	39	55

GRADE	AFFECTIVE TEST							
	Program Boys		Non-Program Boys		Program Girls		Non-Program Girls	
	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test
3	60	57	28	45	62	60	30	45
6	66	67	66	67	67	66	66	67
8	59	54	56	50	65	60	60	55
10	64	46	51	62	68	50	50	63

it is influencing both groups equally.

The results for the tenth grade cognitive test show that although both program groups began the year with a definite advantage over their non-program matches, neither group was able to maintain this lead and end the year showing significant gains. Therefore, we can say that neither group benefitted from program efforts.

The affective results for the post-test at grade 6 show that both program and non-program boys and girls ended the year with relatively the same attitudes. Apparently, the program had not influenced the attitudes of either program boys or program girls to any large extent at this grade level. The post-test affective results for the eighth grade show that both program boys and program girls hold somewhat better attitudes than their non-program matches and have benefitted equally from program experiences which influence attitudes. The tenth grade affective results are similar to the cognitive results and do not show that the program has influenced the attitudes of program boys or program girls to any extent.

In general, in grade levels where the program has made an impact on its students, it has influenced the learning of both program boys and program girls equally.

Results for Black and Other Students and White Students. The pre-test and post-test data were also analyzed to determine if the program had had more effect on either of these two demographic groups. The results of this analysis appear in Table 7.

The pre-test results indicate that in October both program groups had a slight advantage over their non-program counterparts in cognitive learning at every grade level, with the exception of the eighth grade Black and other program students. In grades 3 and 10, the affective pre-test results

Table 7

Percent of Items Answered Correctly by Black and Other and White Students

GRADE	COGNITIVE TEST							
	Black and Other Program Students		Black and Other Non-Program Students		White Program Students		White Non-Program Students	
	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test
3	41	46	33	37	48	53	36	38
6	44	49	38	47	56	63	53	53
8	44	50	53	42	62	62	50	45
10	47	40	39	50	62	46	42	65

GRADE	AFFECTIVE TEST							
	Black and Other Program Students		Black and Other Non-Program Students		White Program Students		White Non-Program Students	
	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test
3	61	56	28	47	61	60	30	41
6	65	63	67	64	68	71	66	68
8	60	56	58	54	65	60	57	46
10	64	47	52	61	69	50	44	69

reveal that both program groups have significant advantages over their non-program counterparts.

The post-test results for both cognitive and affective tests show that both program groups have benefitted equally from the program to the extent that they can score somewhat higher than their non-program counterparts in the May testing. Although the eighth grade Black and other program students began the year at a slight disadvantage, they were able to gain considerably during the year and complete the year with a cognitive test score that was somewhat higher than their non-program counterparts'. The post-test results for the third grade white program students were considerably higher than their non-program matches and suggest that they may have benefitted slightly more from program efforts than the Black and other program students at this grade level.

In general, the program appears to be affecting both program groups more so in the cognitive domain than in the affective domain. The methods of instruction and experiences provided through the program have given both Black and other students and white students an equal opportunity to gain more than their non-program counterparts. The post-test results for both program groups suggest that the white program students have achieved slightly more cognitive and affective learning than the Black and other program students. These results imply that the program may consider modifying its curriculum and teaching methods to allow Black and other program students to achieve to the same extent as the white program students.

The results of the tenth grade analysis for both demographic groups support our earlier conclusions. Neither Black and other students nor white students were able to display superior knowledge or attitudes over their non-program counterparts. It appears that neither group has benefitted from program efforts.

Results for Academic and Non-Academic Students. A comparison was made to determine if at the tenth grade level, the program had influenced the learning of students enrolled in an academic curriculum more so than students enrolled in a non-academic curriculum, or if the reverse were true. The results of this analysis appear in Table 8.

The pre-test results indicate that the program students at the beginning of the year had a definite advantage over their non-program counterparts. The scores received by the academic program students on both the cognitive test and the affective test were significantly higher than their non-program matches. The pre-test results for the non-academic students show that these students also had an advantage over their non-program counterparts; however, the difference between program and non-program scores is not statistically significant. These results suggest that both program groups had an advantage over their non-program matches at the time of the pre-test and should have been able to maintain this lead throughout the year. By comparing the two program student populations, it is apparent that academic program students also have an advantage over the non-academic program students. This is not surprising in that academic curriculum is usually geared for students preparing for professional careers and often contain the better students at a given grade level.

The post-test results show that neither the academic program students nor the non-academic program students were able to obtain scores that were higher than their non-program matches. Future program efforts should definitely be directed toward reaching all students in the tenth grade

Table 8

Percent of Items Answered Correctly by Curriculum Groupings

GRADE	COGNITIVE ITEMS							
	Academic Program Students		Academic Non-Program Students		Non-Academic Program Students		Non-Academic Non-Program Students	
	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test
10	62	54	38	67	47	37	40	47

GRADE	AFFECTIVE ITEMS							
	Academic Program Students		Academic Non-Program Students		Non-Academic Program Students		Non-Academic Non-Program Students	
	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test
10	71	58	44	70	63	43	54	58

with more information and more experiences that would influence their cognitive and affective learning.

CONCLUSIONS AND RECOMMENDATIONS

Based on the results from the pre-test and post-test administered to the Cincinnati Career Development Program students, PSE offers these final conclusions and recommendations.

The program staff has been instrumental in changing teacher behavior and modifying curriculum content to the extent that

- Program students in grade 3 were able to end the year showing superior knowledge and attitudes towards career-related concepts on both the cognitive and affective tests when compared to non-program students.
- Program students in grade 8 were able to end the year showing superior knowledge of career information when compared to non-program students on the cognitive test.
- Program students in grade 6 were able to end the year displaying somewhat more knowledge of career-related concepts than their non-program counterparts on the cognitive test.
- Program students in grades 6 and 8 were able to display slightly better attitudes than their non-program counterparts on the affective section of the May post-test.
- Although program students in grade 10 were able to show superior knowledge over their non-program matches at the time of the October pre-test, they were not able to obtain higher scores on either the cognitive or the affective test in the May post-test.

PSE concludes that the program in Cincinnati has been able to influence the cognitive learning of its students more so than the affective learning. Possible attention should be directed towards experiences and activities which would influence the affective learning of students; however, the program students in Cincinnati do hold relatively positive attitudes towards career education, as indicated by their test scores, and it may be difficult for the program to raise these scores considerably. The program appears to have made the greatest impact on its third grade students in both cognitive and affective learning and its eighth grade students' cognitive learning. To a lesser extent, it has also influenced the cognitive and affective learning of its sixth grade students. The tenth grade is definitely the weakest area of the program and deserves considerable attention in the coming year. In general, where the program has made an impact it has provided program students with a definite advantage over their non-program counterparts.

Further conclusions indicate that the program has also been successful in influencing the instruction of its students to the extent that

- The program students were able to show more knowledge and better attitudes in each of the developmental areas in grades 3, 6, and 8 at the time of the May post-test.
- Both program boys and program girls are receiving equal benefits from program efforts.
- Both Black and other students and white students are benefitting from program efforts, although white program students appear to have a slight advantage over Black and other program students in the amount of cognitive learning they have achieved by the May post-test.
- At the time of the post-test, the program had not affected either academic or non-academic students to any extent.

In most cases, the program has provided instruction and experiences that have influenced the learning of all these students in grades 3, 6, and 8. It has provided a well-rounded approach to career-development that has been received well by its students. Future program efforts should consider modifying curriculum and teaching methods to provide Black and other students with the same opportunity to achieve as their white counterparts. Our strongest recommendation would be to strengthen the tenth grade Exploration component. Our earlier visits to Cincinnati indicated that the program was initiating changes which would influence the tenth grade program considerably. We would hope that during the 1976-77 school year, program efforts in the high school would be more visible and considerably more successful. In total, the program is supplying its students in grades 3, 6, and 8 with a good understanding of career development concepts and experiences which influence positive attitudes towards these concepts. Therefore, we would emphasize that the tenth grade program be strengthened so that the good foundation of career development built in the earlier grades be carried through to the tenth grade where the program students are often making career decisions.

Findings for Cleveland

As mentioned above, the results for each test administration were reported by item, by developmental area groupings, and by total cognitive or affective test scores for each city, each grade, and each student group. The findings for Cleveland are displayed in the data analysis tables appearing in the text or in the Appendix. (The pre-test and post-test data appear in Appendix 3.)

The following sections will describe the pre-test/post-test changes that occurred in each grade, as well as changes that occurred in various student groups.

Student Characteristics. As noted in Table 2 of the Procedures section, the pre-test was administered to 1,467 program students and 486 non-program students, while the post-test was administered to 1,398 program students and 501 non-program students. The number of program students participating in both the pre-test and post-test was sufficient to represent the program at the various grade levels. Likewise, the number of non-program students compared to program students for both test administrations was large enough at each grade level for various comparisons to be made.

For each test administration, the distribution of program students and non-program students at each grade level appears in Table 4. The program and non-program student populations for both test administrations were made up of approximately an equal number of boys and girls at each grade level. Also, both program and non-program populations contained predominantly Black and other students. The tenth grade program population for both test administrations contained approximately 30% students enrolled in an academic curriculum and 70% students enrolled in a non-academic curriculum; while the non-program tenth grade population contained approximately

Table 4

Program and Non-Program Student Characteristics

	Program Students				Non-Program Students			
	Pre-Test		Post-test		Pre-Test		Post-Test	
	N	%	N	%	N	%	N	%
GRADE 3								
Boys	154	43%	153	47%	79	53%	72	50%
Girls	207	57%	176	53%	71	47%	71	49%
Black & Other	360	99%	329	100%	148	99%	143	99%
White	1	1%	0	0%	2	1%	1	1%
GRADE 6								
Boys	184	48%	194	50%	66	48%	65	46%
Girls	201	52%	195	50%	72	52%	76	54%
Black & Other	385	100%	391	100%	138	100%	141	100%
White	0	0%	0	0%	0	0%	0	0%
GRADE 8								
Boys	198	47%	195	47%	46	49%	58	49%
Girls	221	53%	217	53%	47	51%	61	51%
Black & Other	416	99%	409	99%	89	96%	118	99%
White	3	1%	4	1%	4	4%	1	1%
GRADE 10								
Boys	142	47%	121	46%	55	52%	52	54%
Girls	160	53%	144	54%	50	48%	45	46%
Black & Other	301	99%	265	100%	105	100%	97	100%
White	1	1%	0	0%	0	0%	0	0%
Academic	96	32%	83	31%	17	16%	15	15%
Non-Academic	206	68%	182	69%	88	84%	82	85%

Table 5

Percent of Items Answered Correctly

GRADE	COGNITIVE ITEMS				AFFECTIVE ITEMS			
	Program		Non-Program		Program		Non-Program	
	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test
3	46	49	37	47	62	61	59	59
6	44	49	40	48	65	66	62	63
8	51	56	54	49	64	63	61	55
10	47	45	42	30	67	57	59	30

15% students enrolled in an academic curriculum and 85% students enrolled in a non-academic curriculum.

For the various analyses which were run, sample size was considered when computing the "t" value. Based on the data appearing in Table 4 and the information supplied by the program director concerning comparability, the overall program and non-program groups seemed to be as comparable as we would hope to find.

Overall Results. The overall results for the cognitive test (shown in Table 5) indicate that at most grade levels the program students started the year with a better understanding of career-related concepts than the non-program students. The greatest difference appeared in grade 3, where the difference between the program and non-program scores on the pre-test was considered to be statistically significant. The post-test results for grades 3 and 6 indicate that the program students finished the year slightly ahead of their non-program matches also. The difference between the program and non-program overall scores on the post-test, however, is not as great as the difference that existed at the pre-test. This indicates that although the program students were able to display more knowledge of career-related concepts in the May testing, their non-program matches had actually gained more career information during the year. The non-program students in grade 3 ended the year slightly ahead of where the program students had begun the year. This indicates that the information the program students had received prior to beginning third grade had placed them approximately a year ahead of their non-program counterparts, but that during the third grade year the non-program students were able to catch up and end the year with approximately the same amount of knowledge as the program students. The results for the sixth grade cognitive test indicate that although the program students started with slightly more career knowledge than the non-program students, the non-program students were able to end the year at approximately the same place as the program students.

The eighth grade program students started out slightly behind the non-program students but ended the year displaying more knowledge of career-related concepts than the non-program students. It is interesting to note that the non-program students' pre-test score was higher than their post-test score. The results of the tenth grade post-test indicate that the program students, although starting out the year not that far ahead of the non-program students, concluded the year with an average score that was significantly higher than the non-program students. As was the case with the eighth grade, the non-program score on the post-test was considerably lower than its score on the pre-test.

In general, the program students in grades 3 and 6 started the year knowing somewhat more than the non-program students and were able to show a slight difference over the non-program students at the end of the year. Although these differences are not as drastic as we would hope to find, it does indicate that the program has made an impact on its students in these grades. In grades 8 and 10, the program students did not have as great an advantage over their non-program counterparts as the elementary grades, but they were able to show a much greater difference in the amount of career knowledge held by program students when compared to non-program students in the May testing.

The affective results indicate that the program students hold somewhat more positive attitudes towards the concepts presented through career education than the non-program students. The test results for the pre-test and post-test do not indicate that the program students have been influenced by the program in the 1975-76 school year to the extent that their attitudes have charged between the pre-testing and the post-testing sessions. In fact, the program scores decreased in three of the four grades. However, when comparing the program post-test scores with the non-program post-test scores at all four grade levels, the program was able to score somewhat higher than the non-program on all four tests.

It appears that the effect of the program is more easily distinguished on the cognitive test than the affective test. This is not surprising in that it is often easier to supply students with more information than to change their attitudes. Apparently the program has been successful in supplying the students with career-related information and concepts and somewhat less successful in influencing the attitudes held by its students. The most impressive results occur in the tenth grade where the post-test results for both the cognitive and affective tests of the program students were statistically significant and definitely show that the program has made an effect on the amount of career information and the degree of positive attitudes held by these students. At this grade level when students are often involved in making career decisions, it is very important to present a strong program that offers students information and guidance.

Results for Developmental Areas. As mentioned earlier, the results of the cognitive and affective tests were also analyzed by developmental areas. The number of items in each developmental area was presented in Table 1 of the Procedures section. The number of items in each developmental area differed at each grade level. When looking at the results from both the pre-test and the post-test at each grade level, the developmental areas can be ranged by "t" values to show areas in which the program students showed superior knowledge or attitudes ("t" values above 1.65); to show areas where the program and non-program students were equally informed ("t" values from -1.65 to +1.65); and finally, to show areas in which the non-program students showed superior knowledge or attitudes ("t" values above -1.65).

The results from the third grade pre-test indicate that the program students began the year with superior knowledge in the areas of Employability and Work Adjustment Skills, World of Work, and Economics. In each of these areas on either the cognitive or the affective tests, the results show the superiority of the program students over the non-program students; however, this superiority did not continue throughout the year. At the time of the May post-test, the program students were only able to score somewhat higher than the non-program students in the areas of Employability and Work

Adjustment Skills and World of Work. These scores were not significantly higher, but did indicate some program strength.

In general, the third grade results indicate that the program students were able to begin the year in a much stronger position for each of the developmental areas than the non-program students. However, they were not able to maintain this difference throughout the year. Apparently, the non-program students were also being instructed in several of the developmental areas and gained in cognitive as well as affective learning. The pre-test results indicate that the program may have possibly been more successful in the grades preceding third grade and less successful during the third grade year.

The results for the developmental areas at the sixth grade indicate that at the time of the pre-test the program students held significantly more knowledge in the area of Self and significantly better attitudes in the area of World of Work. The program students were able to maintain better attitudes in the area of World of Work throughout the year and the post-test results indicate that the program students held significantly better attitudes in this area as well as the area of Education and Training. The cognitive results, however, do not indicate that the program students have superior knowledge over the non-program students in any of the seven developmental areas. In fact, in some areas the program students' scores were slightly less than the non-program students'.

In total, it appears that although the program students started the year with slightly more knowledge in each of the seven developmental areas than the non-program students, as the year progressed the amount of additional information the program students received in each of the developmental areas was not sufficient enough for them to show superior knowledge over the non-program students by the end of the year.

The results for the developmental areas at the eighth grade indicate that the program students began the year with slightly lower scores in five of the seven developmental areas than the non-program students on the cognitive test. By the end of the year, the program students were able to show considerably more knowledge of career-related concepts than the non-program students. In the areas of Education and Training and Self, the program students were able to show superior knowledge over the non-program students. The affective results show that although the program students' scores did not change considerably over the year, the difference between program and non-program students' scores increased. The post-test results show that the program students held considerably better attitudes than the non-program students in the areas of Individual and Environment and World of Work. In all other areas, the program students' scores were somewhat higher than the non-program students'; this difference suggests that the program students gained much more favorable attitudes towards the concepts than the non-program students.

In general, the program has made a much clearer impact on its eighth grade students than the previous elementary students. The differences between program and non-program scores for the overall cognitive test and overall affective test are much greater at this level than the previous grade levels. It appears that the program is providing its students with information and experiences that influence cognitive and affective learning in all seven of the developmental areas.

The results for the developmental areas at the tenth grade indicate that the program has made considerable impact on its students at this grade level in five of the seven developmental areas represented on the cognitive test and all seven of the developmental areas represented on the affective test. The pre-test results indicated that both program and non-program students had a good understanding of the career-related concepts in each of the seven developmental areas on the cognitive test. However, in the course of the year the program was able to provide its students with considerably more information in five of the seven developmental areas and consequently, the program students scored significantly higher than the non-program students in these five developmental areas. The overall results for the cognitive post-test denote that the program has made considerable impact on its students at this grade level and has given them a clear advantage over their non-program counterparts. The pre-test results for the affective test indicate that both program and non-program students held largely positive attitudes towards the concepts presented through career education. As was the case with the cognitive results, the affective post-test results reveal that the program students ended the year with significantly more positive attitudes towards career-related concepts than the non-program students.

The pre-test/post-test results for the tenth grade definitely display a program that is making an impact on its students' cognitive and affective learning. The tenth grade program encompasses all seven developmental areas and gives its students an impressive advantage over their non-program counterparts.

In total, the Cleveland Career Development Program is providing its students with a well-rounded approach to career education. At each grade level, there are obvious strengths and weaknesses. Surprisingly, the program appears to be stronger at the junior high and senior high levels. This is quite impressive in that PSE has found that it is much more difficult for local school districts to implement a strong career education program at these grade levels. The Cleveland program has obviously made a successful attempt at reaching teachers and students at these grade levels and their efforts should be continued. Possible future program efforts might be directed at reaching the elementary levels and providing these students with the same advantage over non-program students as the junior high and senior high students.

Results for Boys and Girls. The results of both the cognitive and affective tests were also analyzed to locate differences between program boys and non-program boys and also program girls and non-program girls. The overall results for the cognitive and affective tests at each grade level for both test administrations appear in Table 6.

The pre-test results indicate that at the beginning of the school year both program boys and program girls knew relatively the same amount of career information and held relatively positive attitudes towards career education. The pre-test results also show that both program groups knew relatively more about career education and held relatively more positive attitudes towards these concepts than their non-program matches, with the exception of the cognitive results for the eighth grade girls. These results suggest that both program groups began the year with a slight advantage over their non-program matches but at an equal level with their program counterparts.

The results for the cognitive section of the post-test show that both program boys and program girls ended the year knowing slightly more than their non-program matches, with the exception of the sixth grade

Table 6

Percent of Items Answered Correctly by Boys and Girls

GRADE	COGNITIVE TEST							
	Program Boys		Non-Program Boys		Program Girls		Non-Program Girls	
	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test
3	45	47	37	45	47	52	37	48
6	44	48	41	50	45	50	38	46
8	52	56	52	47	51	57	55	51
10	46	41	42	30	48	47	41	30

GRADE	AFFECTIVE TEST							
	Program Boys		Non-Program Boys		Program Girls		Non-Program Girls	
	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test
3	61	61	58	58	63	62	59	61
6	64	65	61	65	65	66	62	62
8	63	60	58	50	65	66	63	60
10	64	53	56	30	69	60	64	29

program boys. These overall results suggest that the methods of instructtion and activities presented through the program have given both program boys and program girls an equal opportunity to benefit.

The affective results for the post-test show that both program boys and program girls completed the school year with attitudes that are slightly more positive than their non-program counterparts. As is the case with the cognitive results, both program groups appear to be receiving equal benefit from the activities and experiences provided through the program that influence affective learning.

Results for Black and Other Students and White Students. PSE had planned to make comparisons to determine if the program had had more effect on either of these two demographic groups. Because both program and non-program populations contained predominantly Black and other students, these comparisons would result in observations that are identical to the overall results for program and non-program students at each grade level. Table 7 shows the distribution of the scores for Black and other students and white students. In most cases, the number of white students represented in the sample was not large enough to generate tables and no scores were reported.

Results for Academic and Non-Academic Students. At the tenth grade level, an analysis was run to compare the results between students enrolled in an academic curriculum and students enrolled in a non-academic curriculum for program and non-program students. The results of this analysis are shown in Table 8. The pre-test results indicate that both the program and non-program academic students had an advantage over the non-academic students from each group in the beginning of year on both the cognitive and affective tests. The academic students were able to maintain this

Table 7

Percent of Items Answered Correctly by Black and Other and White Students

GRADE	COGNITIVE TEST							
	Black and Other Program Students		Black and Other Non-Program Students		White Program Students		White Non-Program Students	
	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test
3	46	49	37	47	--	--	27	--
6	44	49	40	48	--	--	--	--
8	51	56	54	49	53	65	62	--
10	47	45	42	30	--	--	--	--

GRADE	AFFECTIVE TEST							
	Black and Other Program Students		Black and Other Non-Program Students		White Program Students		White Non-Program Students	
	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test
3	62	61	59	60	--	--	55	--
6	65	66	62	63	--	--	--	--
8	64	63	61	55	58	58	57	--
10	67	57	59	30	--	--	--	--

Table 8

Percent of Items Answered Correctly by Curriculum Groupings

GRADE	COGNITIVE ITEMS							
	Academic Program Students		Academic Non-Program Students		Non-Academic Program Students		Non-Academic Non-Program Students	
	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test
10	54	53	53	33	44	41	40	29

GRADE	AFFECTIVE ITEMS							
	Academic Program Students		Academic Non-Program Students		Non-Academic Program Students		Non-Academic Non-Program Students	
	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test
10	71	62	66	32	65	54	58	30

advantage over the non-academic students throughout the year and the post-test results show that both groups of academic students scored higher than the non-academic students at the end of the year. It is not surprising that the academic students of both groups scored higher than the non-academic students of both groups. Academic curricula are usually geared for students who are preparing for college or professional careers, and therefore contain the better students at a given grade level.

When comparing the two program groups to their non-program counterparts, both program groups began the year with a slight advantage over their non-program matches and completed the year with an even greater margin of difference between program and non-program students' scores. Although the academic program students have a slight advantage over the non-academic program students, both groups appear to be benefitting equally from program efforts and are able to display considerably more cognitive and affective learning than their non-program matches.

CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the pre-test and post-test, PSE offers these final conclusions and recommendations.

The program staff has been instrumental in changing teacher behavior and modifying curriculum content to the extent that:

- Program students in grades 8 and 10 were able to end the year showing superior knowledge of career-related concepts when compared with non-program students.
- Program students in grades 3 and 6, although starting the year slightly ahead of their non-program matches, ended the year displaying knowledge equal to that of the non-program students.
- Program students in grades 3, 6, and 8 ended the year with slightly better attitudes than their non-program matches.
- Program students in grade 10 completed the year with significantly different attitudes than their non-program counterparts.

Therefore, PSE would recommend that program efforts at the junior high and senior high be continued. Increased participation on the part of teachers and students possibly will raise the overall scores on the cognitive and affective tests for these students and assure that all students are receiving the career information and experiences that are necessary for making good career decisions. Future program efforts may be directed towards the elementary grades and, thus, giving these students the same advantages as the junior high and senior high students over their non-program matches.

Further conclusions indicate that the program has also been successful to the extent that:

- It is providing its students with a well-rounded approach to career education as evidenced by the test results for developmental areas.
- The methods of instruction and activities presented through the program have given both program boys and program girls an equal opportunity to benefit.
- Although the academic program students have a slight advantage over the non-academic program students, both groups appear to be benefitting equally from program efforts and are able to display considerably more cognitive and affective learning than their non-program matches.

PSE feels that these are fair observations of the Cleveland Career Development Program and relate well to what we observed while we were visiting the local school district. The program has been very successful in implementing a career development program that can show differences in learning between program and non-program students. The strength of the program lies in the Orientation and Exploration components. As we stated earlier, this is very impressive. PSE often has to search far and wide to find junior high and senior high programs that are so well developed.

Findings for Springfield

As mentioned above, the results for each test administration were reported by item, by developmental area groupings, and by total cognitive and affective scores for each city, each grade, and each student group.

The findings for Springfield are displayed in the data analysis tables appearing in the text or in the Appendix. (The pre-test and post test data appear in Appendix 4.)

The following sections will describe the pre-test/post-test changes that occurred in each grade, as well as changes that occurred in various student groups.

Student Characteristics. As noted in Table 2 of the Procedures section, the pre-test was administered to 1,443 program students and 435 non-program students, while the post-test was administered to 1,312 program students and 429 non-program students. The number of program students participating in both the pre-test and the post-test was sufficient to represent the program at the various grade levels. Likewise, the number of non-program students compared to program students for both test administrations was large enough at each grade level for various comparisons to be made.

For each test administration, the distribution of program students and non-program students at each grade level appears in Table 4. For both the pre-test and the post-test, the program and non-program populations contained approximately an even division between boys and girls at each grade level. Also, for both test administrations, the third and sixth grade program and non-program student populations contained predominantly white students. The eighth and tenth grade program population was more evenly divided between Black and other students and white students, while the non-program population for these grades contained predominantly white

Table 4

Program and Non-Program Student Characteristics

	Program Students				Non-Program Students			
	Pre-Test		Post-Test		Pre-Test		Post-Test	
	N	%	N	%	N	%	N	%
GRADE 3								
Boys	186	51%	176	53%	48	53%	50	63%
Girls	175	49%	155	47%	43	47%	29	37%
Black & Other	121	33%	119	36%	31	33%	23	29%
White	241	67%	213	64%	61	67%	56	71%
GRADE 6								
Boys	184	48%	166	47%	46	49%	44	49%
Girls	199	52%	188	53%	48	51%	45	51%
Black & Other	126	33%	107	30%	18	19%	11	12%
White	257	67%	248	70%	76	81%	78	88%
GRADE 8								
Boys	180	51%	167	49%	54	42%	58	40%
Girls	169	49%	176	51%	76	58%	86	60%
Black & Other	168	48%	166	48%	20	15%	13	9%
White	179	52%	177	52%	110	85%	131	91%
GRADE 10								
Boys	174	52%	153	54%	58	48%	58	54%
Girls	161	48%	129	46%	62	52%	50	46%
Black & Other	145	44%	121	43%	24	20%	17	16%
White	188	56%	161	57%	96	80%	91	84%
Academic	79	24%	63	22%	47	39%	39	36%
Non-Academic	253	76%	219	78%	73	61%	69	64%

students. Both program and non-program tenth grade populations were largely made up of students enrolled in a non-academic curriculum, with students enrolled in an academic curriculum representing approximately 20% of the program population and 37% of the non-program population.

For the various analyses which were run on the data, sample size was considered when computing the "t" value. The information supplied by the program director concerning comparability suggests that possibly the selection of non-program schools was not the best choice. Although the non-program schools came from the same school district as the program schools, it was felt that the non-program students, especially in grades 8 and 10, were receiving some sort of career education. Therefore, it was considerably harder for the program students in Springfield to show superior knowledge over their non-program counterparts.

Overall Results. The overall results for the cognitive and affective tests for both the pre-test and post-test appear in Table 5. The overall results for both the cognitive and affective tests indicate that in grades 3, 8, and 10, the program students started the year at a slight disadvantage when compared to the non-program students. In these three grades, the scores received by the program students on both cognitive and affective tests were slightly lower than those received by the non-program students. In grade 6, however, the program students began the year with a slight advantage over their non-program matches on both the cognitive and the affective tests. The difference between the program and non-program scores on the sixth grade cognitive test was significant. This indicates that the program students had a definite advantage over their non-program matches.

The pre-test results for the third grade program students are excep-

Table 5

Percent of Items Answered Correctly

GRADE	COGNITIVE ITEMS				AFFECTIVE ITEMS			
	Program		Non-Program		Program		Non-Program	
	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test
3	33	54	35	49	28	61	37	61
6	58	56	48	51	66	68	64	66
8	58	63	68	76	64	65	74	74
10	47	60	60	63	55	68	72	71

differences that existed at the time of the pre-test. This seems to indicate that although the program students were not able to score higher than the non-program students, they were definitely benefitting from program efforts and were able to show considerably more cognitive learning and significantly better attitudes than the earlier pre-test results.

In most cases, the program has made an impact on its students which enabled them to increase their scores on both the cognitive and affective tests during the course of the year. The gain in students' scores is impressive, especially in grades 3 and 10. PSE would certainly recommend that in future testing efforts, a better choice of non-program schools be made. The results from the pre-test/post-test seem to indicate that if matched against schools where students were definitely not receiving career education, the students of the Springfield Career Development Program would undoubtedly appear to be better informed than the non-program students.

Results for Developmental Areas. As mentioned earlier, the results of the cognitive and affective tests were also analyzed by developmental areas. The number of items in each developmental area was presented in Table 1 of the Procedures section. The number of items in each developmental area differed at each grade level. When looking at the results from both the pre-test and the post-test at each grade level, the developmental areas can be ranked by "t" values to show areas in which the program students showed superior knowledge or attitudes ("t" values above 1.65); to show areas where the program and non-program students were equally informed ("t" values from -1.65 to +1.65); and finally, to show areas in which the non-program students showed superior knowledge or attitudes ("t" values above -1.65).

tionally low and imply that there is a definite need to strengthen the K-2 program. In the other three grade levels (6, 8, and 10), the program students' pre-test scores are average, and this suggests that the program has supplied students with some career information and experiences that influence attitudes in some earlier grades.

The post-test results for both the cognitive and affective tests reveal that the program students gained considerably during the year, with the exception of the sixth grade cognitive results. In grades 3 and 6, the program students were able to achieve scores on the May post-test that were equal to or slightly higher than their non-program counterparts for both the cognitive and affective tests. The third grade results imply that the program was able to make a considerable impact on its students at this grade level and to give them a definite advantage over their non-program counterparts by the end of the third grade year. The sixth grade results do not show as great a program impact. The sixth grade program students began the year with an advantage over their non-program matches and ended the year displaying more knowledge of career development concepts than the non-program students. However, the difference between program and non-program students' scores on the cognitive post-test was not as great as the difference that was evidenced in the pre-test.

The results for the eighth and tenth grade show that although the program students were not able to score as high as the non-program students on either of the two tests, they had gained considerably during the course of the year. This is especially true for the tenth grade students, whose post-test score on both tests was thirteen points higher than their pre-test score. For both tenth grade tests, the difference between program and non-program scores on the post-test is considerably smaller than the

The results from the third grade cognitive and affective pre-test indicate that the program students knew considerably more about concepts relating to Employability and Work Adjustment Skills than the non-program students at the time of the October testing. In all other areas, the program students were slightly behind the non-program students on either the cognitive or the affective test. By the time of the May post-test, the program students had acquired considerably more knowledge concerning career education concepts and considerably better attitudes towards these concepts than they had displayed during the earlier testing. The results for the cognitive post-test show that the program students were able to score higher than the non-program students in six of the seven developmental areas, and that in two of the areas (World of Work and Employability and Work Adjustment Skills), the difference between program and non-program scores was considered to be statistically significant. The post-test results for the affective test show that both groups were able to display considerably better attitudes towards career-related concepts than their earlier test results. For most developmental areas, however, the difference between program and non-program students' scores is not great and does not indicate any real program strengths.

In summary, the program is providing its third grade students with career information and experiences relating to all seven developmental areas, thus resulting in increased learning. Future program efforts should continue to provide its students at this grade level with a well-rounded approach to career development.

The overall results for the sixth grade pre-test indicate that the program students began the year with a definite advantage over the non-program students on the cognitive test and a slight advantage over the non-program students on the affective test. The strongest developmental areas at the time of the pre-test were World of Work and Education and Training. In both of these areas, the difference between the program students' and non-program students' scores was statistically significant. During the course of the year, however, the non-program students were able to catch up with the program students in most developmental areas. The post-test results do not indicate that any of the developmental areas are strong parts of the sixth grade program. The sixth grade program students ended the year knowing slightly more about career education and holding slightly more positive attitudes than the non-program students.

In general, the sixth grade program appears to be providing students with information and experiences in all seven of the developmental areas, but it could provide its students with more information and activities. Thus, it would ensure that its students would end the year with the same advantage over the non-program students which they held at the beginning of the year.

The pre-test results for the eighth grade indicate that the program students began the year at a slight disadvantage in all seven of the developmental areas on either the cognitive or the affective tests. In all seven of the developmental areas, the non-program students were able to score somewhat higher than the program students. These results show that in October the non-program students knew considerably more about career-related concepts pertaining to all seven of the developmental areas than the program students. This situation would make it very difficult for the program students to gain throughout the year and to end the year scoring higher than the non-program students.

The post-test results show that although the program students were able to raise their scores in most of the developmental areas on the cognitive and affective tests, they were not able to decrease the difference between the program and non-program students' scores in any of the developmental areas. Thus, the non-program students concluded the year knowing considerably more than the program students in each of the seven developmental areas and holding relatively more positive attitudes towards those concepts represented in the developmental areas.

These results suggest that although the program students were able to gain higher scores on the post-test than the pre-test, the program could have made a greater impact on the cognitive and affective learning of its students at this grade level. The program students definitely started the year at a disadvantage, but through program efforts should have been able to decrease the margin of difference between their scores and non-program students' scores. Future program efforts should be directed towards reaching students in the Orientation component with more information relating to careers and more experiences that would influence attitudes in all seven of the developmental areas. The weakest developmental areas indicated by the post-test results appear to be World of Work, Economics, and Decision-Making.

The results for the developmental areas on the tenth grade test indicate that the program students in Springfield began the school year knowing considerably less than the non-program students with whom they were compared in all seven of the developmental areas on either the cognitive or the affective tests. This disadvantage made it very difficult for program students to end the year displaying more knowledge or better attitudes than their non-program matches.

The post-test results reveal that the program had made a definite impact on its students. In each of the seven developmental areas, the program students were able to raise their scores considerably from their earlier pre-test scores, and the margin of difference between program and non-program students' scores in each of the developmental areas was greatly decreased. By the time of the May post-test, the program students were able to receive scores that were equal to the non-program students in the areas of Employability and Work Adjustment Skills and Economics. In all other areas, the difference between program and non-program students' scores was not that great. The major difference occurred on the affective test in the area of Individual and Environment, and the next largest difference occurred in the area of Decision-Making on the cognitive test. These results show that the instruction and experiences offered by the Career Development Program were able to influence the cognitive and affective learning of its students considerably during the 1975-76 school year. Program efforts should definitely continue to provide its students with information and experiences relating to all seven developmental areas at this grade level.

Results for Boys and Girls. The results for both the cognitive and affective tests were also analyzed to locate differences between the program boys and non-program boys and also program girls and non-program girls. The overall results for the cognitive and affective tests at each grade level for both test administrations appear in Table 6.

The pre-test data indicate that both program boys and program girls began the year with equal knowledge of career education concepts and equally positive attitudes towards these concepts. This implies that the methods of instruction and activities provided by the program could be equally received by program boys and program girls, and that neither group had an advantage over the other group at the beginning of the school year.

Table 6

Percent of Items Answered Correctly by Boys and Girls

GRADE	COGNITIVE TEST							
	Program Boys		Non-Program Boys		Program Girls		Non-Program Girls	
	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test
3	33	54	34	49	32	55	35	50
6	56	55	50	55	60	58	47	48
8	56	59	67	77	60	67	69	76
10	46	60	59	61	48	60	60	65

GRADE	AFFECTIVE TEST							
	Program Boys		Non-Program Boys		Program Girls		Non-Program Girls	
	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test
3	28	60	35	61	28	62	39	62
6	65	66	64	65	67	70	63	67
8	62	62	74	73	65	67	74	75
10	55	67	72	70	55	70	72	73

The post-test results show that the program made an equal impact on the cognitive learning of both program boys and program girls in grades 3, 6, and 10. At these three grade levels, the overall scores for program boys and program girls are very similar. In grade 8, the program girls received a much higher score than the program boys and this indicates that possibly they have benefitted more from instruction that influences cognitive learning than the program boys. The post-test affective results indicate that the program has influenced both program boys and program girls to the same extent at all four grade levels. In general, the program is providing both program boys and program girls with an equal opportunity to benefit from its efforts.

When comparing the cognitive results for both program and non-program boys and girls, it is evident that both program groups received instruction that would enable them in grades 3 and 6 to show cognitive learning of career development concepts that was equal to or slightly better than their non-program matches. In grades 8 and 10, where the competition was slightly greater, neither program group was able to score higher than their non-program matches on the cognitive post-test.

The affective results for the post-test reveal that the program and non-program boys and girls hold relatively close to the same attitudes. In grade 6, both program groups were able to score slightly higher than their non-program counterparts, while program boys and program girls in grades 3 and 10 scored slightly lower than their non-program counterparts. In grade 8, the difference between program and non-program scores was much larger than at any other grade level. Both non-program boys and non-program girls received considerably higher scores than their program counterparts. Thus, both program groups were able to show more cognitive growth than affective growth and in most cases, both program groups were able to compare well with their non-program matches in the May post-test. In summary, where the program has made an impact on its students, it has influenced the learning of both program boys and program girls to the same degree.

Results for Black and Other Students and White Students. The pre-test and post-test data were also analyzed to determine if the program has had more effect on either of these two demographic groups. The results of this analysis appear in Table 7.

The pre-test results indicate that at the beginning of the year both program groups had acquired approximately the same amount of cognitive learning, with the greatest difference occuring in grades 6 and 8, where the white program students scored somewhat higher than the Black and other program students on the cognitive test. Also, both program groups began the year at a slight disadvantage when compared to their non-program counterparts, except for the grade 6 white program students who began the year knowing significantly more than the white non-program students. Although in most cases, both program groups began the year at a disadvantage, several of the groups were able to gain during the year, and the result of the post-test placed them slightly ahead of their non-program matches. This is true for both program groups in grade 3, the white program students in grade 6, and the Black and other program students in grade 10. In each of these cases, the program groups achieved scores on the May test that were higher than their non-program counterparts. When comparing the results of the Black and other program students and the white program students on the May post-test, it appears that the white program students were able to gain considerably more cognitive learning than the Black and other program

Table 7

Percent of Items Answered Correctly by Black and Other and White Students

GRADE	COGNITIVE TEST							
	Black and Other Program Students		Black and Other Non-Program Students		White Program Students		White Non-Program Students	
	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test
3	32	47	34	44	33	58	35	51
6	52	49	45	51	61	59	49	51
8	53	57	57	67	62	70	70	77
10	46	54	54	51	43	64	61	65

GRADE	AFFECTIVE TEST							
	Black and Other Program Students		Black and Other Non-Program Students		White Program Students		White Non-Program Students	
	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test
3	26	60	30	56	29	61	40	64
6	64	66	63	62	67	69	64	66
8	62	63	68	67	65	66	75	75
10	56	66	67	66	54	70	73	72

students. At all four grade levels, the white program students received a higher score than the Black and other program students.

In general, it appears that the program is influencing the learning of both program groups, but that the white program students are able to show more learning than the Black and other program students. Future program efforts could possibly consider modifying curriculum and teaching methods to provide Black and other students with an equal opportunity to acquire knowledge of career education concepts.

The results for the affective section of the post-test are similar to the cognitive results. In most cases, both program groups began the year with slightly less positive attitudes than their non-program counterparts. By the end of the year, the program had influenced the affective learning of both groups to the extent that the program students were able to score slightly higher than the non-program students in several instances. The Black and other program students in grades 3, 6, and 10 received scores on the post-test that were equal to or slightly higher than the Black and other non-program students' scores. At grade 6, the white program students were also able to obtain a score that was slightly higher than their non-program match. These results indicate that to the extent the program has influenced the attitudes of its students, it has affected the attitudes of both student groups. Both program groups received scores on the affective post-test that were very similar and indicate that neither group has an advantage over the other in affective learning.

In total, the program is providing its students with an advantage over their non-program counterparts in most grades.

Results for Academic and Non-Academic Students. At the tenth grade level, a comparison was made to determine how the program had influenced the learning of students in an academic curriculum and students enrolled in a non-academic curriculum when compared with non-program matches. The results of this analysis appear in Table 8.

As was indicated earlier, the tenth grade program students began the year with a slight disadvantage when compared to their non-program counterparts. This is true for both academic program students and non-academic program students. The scores on the pre-test for both of these groups were somewhat lower than their non-program counterparts' on both the cognitive and affective tests. Also, the non-academic program students had a disadvantage when compared with the academic program students at the time of the October testing. The academic program students were able to score considerably higher than the non-academic program students. This is not unusual in that academic curricula are usually geared for students pursuing professional careers and often contain the better students at a given grade level.

The cognitive results for the post-test showed that although the academic program students were able to raise their overall score, they were not able to show superior knowledge over the academic non-program students. This indicates that although they had received instruction that increased their learning of cognitive concepts, the program academic students did not learn more than the non-program academic students. On the other hand, the non-academic program students raised their score on the cognitive test considerably and were able to show equal learning of career development concepts when compared to their non-program counterparts. Based on the information supplied by the program director concerning the amount of career

Table 8

Percent of Items Answered Correctly by Curriculum Groupings

GRADE	COGNITIVE ITEMS							
	Academic Program Students		Academic Non-Program Students		Non-Academic Program Students		Non-Academic Non-Program Students	
	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test
10	63	67	68	71	42	58	54	58

GRADE	AFFECTIVE ITEMS							
	Academic Program Students		Academic Non-Program Students		Non-Academic Program Students		Non-Academic Non-Program Students	
	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test
10	71	70	75	76	50	68	70	69

education received by non-program students, these results are very impressive. The program students from the Springfield Career Development Program began the year with a definite disadvantage when compared to the non-program students, and even though the non-program students were receiving some sort of career information, the program students were able to raise their scores and end the year with relatively little difference between program and non-program learning.

The post-test results for the affective test show that the attitudes of program and non-program academic students did not change considerably during the year. Each group received an overall score on the post-test that was approximately the same as the score they had received earlier on the pre-test. These results show that the program was not able to influence the attitudes of its academic students to any extent. The scores for both academic program students and non-program students are relatively high and suggest that these students already have attitudes that are expected of career-educated students. As was the case with the cognitive test, the non-academic program students began the year with a definite disadvantage when compared to their non-program counterparts. However, during the course of the year they were influenced by the program to the extent that on the May post-test they were able to display attitudes that were equal to their non-program counterparts.

The success of the tenth grade program is most dramatically evidenced in the post-test results for non-academic students. Apparently, the program has been able to supply these students with the information and experiences necessary for showing increased cognitive and affective learning. These program efforts should be continued and future efforts might be directed towards changing the academic curriculum to give those students the same advantage as their non-academic counterparts.

CONCLUSIONS AND RECOMMENDATIONS

Based on the results from the pre-test and post-test administered to the Springfield Career Development Program students, PSE offers these final conclusions and recommendations.

The program staff has been instrumental in changing teacher behavior and modifying curriculum content to the extent that

- Program students in grades 3 and 6 were able to end the year showing slightly more knowledge of career education concepts and slightly better attitudes towards these concepts than their non-program matches.
- Program students in grades 8 and 10 were able to show an increase in cognitive and affective learning between the pre-test and the post-test.
- Program students in grades 3 and 6 were able to display slightly more knowledge and slightly better attitudes towards the concepts relating to all seven developmental areas than their non-program matches on the May post-test.
- Program students in grade 10 were able to decrease the margin of difference between program and non-program students' scores in all seven of the developmental areas on both the cognitive and affective sections of the May post-test.
- Both program boys and program girls appear to be benefitting from the program efforts.
- Both demographic groups are receiving instruction that influences their cognitive and affective learning and gives them a slight advantage over their non-program counterparts.

Therefore, PSE would conclude that the program has made an impact on its students at all grade levels. Each grade level has its own strength and weaknesses and future program efforts can be directed accordingly. The results of these analyses reflect much of what we have observed while we were in the Springfield district. The weakest component appears to be the Orientation component and deserves further attention. The difference between program pre-test and post-test scores, especially on the cognitive test, indicates that the program has accomplished a great deal during the 1975-76 school year. PSE very seldom finds pre-test and post-test scores that are so different.

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